

University of Windsor

## Scholarship at UWindor

---

Electronic Theses and Dissertations

Theses, Dissertations, and Major Papers

---

1996

### Children of chronic pain sufferers: Assessing their social competence.

Sophie. Beugnot  
*University of Windsor*

Follow this and additional works at: <https://scholar.uwindsor.ca/etd>

---

#### Recommended Citation

Beugnot, Sophie., "Children of chronic pain sufferers: Assessing their social competence." (1996).  
*Electronic Theses and Dissertations*. 1422.  
<https://scholar.uwindsor.ca/etd/1422>

This online database contains the full-text of PhD dissertations and Masters' theses of University of Windsor students from 1954 forward. These documents are made available for personal study and research purposes only, in accordance with the Canadian Copyright Act and the Creative Commons license—CC BY-NC-ND (Attribution, Non-Commercial, No Derivative Works). Under this license, works must always be attributed to the copyright holder (original author), cannot be used for any commercial purposes, and may not be altered. Any other use would require the permission of the copyright holder. Students may inquire about withdrawing their dissertation and/or thesis from this database. For additional inquiries, please contact the repository administrator via email ([scholarship@uwindsor.ca](mailto:scholarship@uwindsor.ca)) or by telephone at 519-253-3000ext. 3208.

## INFORMATION TO USERS

This manuscript has been reproduced from the microfilm master. UMI films the text directly from the original or copy submitted. Thus, some thesis and dissertation copies are in typewriter face, while others may be from any type of computer printer.

**The quality of this reproduction is dependent upon the quality of the copy submitted.** Broken or indistinct print, colored or poor quality illustrations and photographs, print bleedthrough, substandard margins, and improper alignment can adversely affect reproduction.

In the unlikely event that the author did not send UMI a complete manuscript and there are missing pages, these will be noted. Also, if unauthorized copyright material had to be removed, a note will indicate the deletion.

Oversize materials (e.g., maps, drawings, charts) are reproduced by sectioning the original, beginning at the upper left-hand corner and continuing from left to right in equal sections with small overlaps. Each original is also photographed in one exposure and is included in reduced form at the back of the book.

Photographs included in the original manuscript have been reproduced xerographically in this copy. Higher quality 6" x 9" black and white photographic prints are available for any photographs or illustrations appearing in this copy for an additional charge. Contact UMI directly to order.

# UMI

A Bell & Howell Information Company  
300 North Zeeb Road, Ann Arbor MI 48106-1346 USA  
313/761-4700 800/521-0600



**CHILDREN OF CHRONIC PAIN SUFFERERS:  
ASSESSING THEIR SOCIAL COMPETENCE**

by  
**Sophie Beugnot**

**A Thesis  
Submitted to the Faculty of Graduate Studies and Research  
Through the Department of Psychology  
in Partial Fulfillment of the Requirements for  
the Degree of Master of Arts at the  
University of Windsor**

**Windsor, Ontario, Canada**

**1996**

**© 1996 Sophie Beugnot**



**National Library  
of Canada**

**Acquisitions and  
Bibliographic Services**

395 Wellington Street  
Ottawa ON K1A 0N4  
Canada

**Bibliothèque nationale  
du Canada**

**Acquisitions et  
services bibliographiques**

395, rue Wellington  
Ottawa ON K1A 0N4  
Canada

*Your file Votre référence*

*Our file Notre référence*

The author has granted a non-exclusive licence allowing the National Library of Canada to reproduce, loan, distribute or sell copies of this thesis in microform, paper or electronic formats.

The author retains ownership of the copyright in this thesis. Neither the thesis nor substantial extracts from it may be printed or otherwise reproduced without the author's permission.

L'auteur a accordé une licence non exclusive permettant à la Bibliothèque nationale du Canada de reproduire, prêter, distribuer ou vendre des copies de cette thèse sous la forme de microfiche/film, de reproduction sur papier ou sur format électronique.

L'auteur conserve la propriété du droit d'auteur qui protège cette thèse. Ni la thèse ni des extraits substantiels de celle-ci ne doivent être imprimés ou autrement reproduits sans son autorisation.

0-612-30888-X

## ABSTRACT

Literature on chronic pain has identified alexithymia, depression and marital difficulties as characteristics of chronic pain populations. Previous research has also linked these parental characteristics with social competence deficits in children, suggesting a need to assess the social skills of chronic pain sufferers' children. In the current study, samples of chronic pain sufferers and pain-free participants were compared in terms of levels of alexithymia, depression and marital difficulties as well as in their children's social competence. The predictive value of these parental characteristics and others for children's social competence was also investigated. Gender differences in social competence and correlates of boys' and girls' social competence were also assessed. No group differences were found in children's social skills levels but chronic pain sufferers did report more depression and alexithymia than pain-free participants. Children's social competence across both groups was predicted by children's age and by parental alexithymia. In the pain sample, children's social skills were predicted by the length of time for which they were exposed to their parent's pain, parental pain intensity, depression, and alexithymia. Contrary to prediction, level of marital satisfaction was not an important predictor of children's social competence. No gender differences were found in children's social skills but results suggested they did differ on correlates of their social competence. Implications of these findings for intervention in chronic pain families are discussed.

## ACKNOWLEDGMENTS

I wish to express my sincere gratitude to Dr. Cheryl Thomas for her patience, constant optimism, and emotional support throughout this project. Your guidance, knowledge, and sense of organization were instrumental to the successful completion of this research. I also wish to thank Dr. Kathryn Lafreniere and Dr. Donald Leslie for their support and helpful suggestions. I wish to thank Dr. Richard Catchlove who stimulated my interest in the chronic pain syndrome and gave me great support and encouragement in my desire to pursue graduate studies.

I wish to thank my parents for their unconditional love and support. They have been instrumental to my academic success and have been a constant source of inspiration and strength throughout my life. I also wish to thank Louis Hamann for his love and devotion, for his patience with me through stressful times, and for his confidence in my achievements.

I would also like to acknowledge the contribution of Brent Lucas of "Help for Headaches" for his tremendous help and support in gathering participants for this research. I also wish to thank Dr. John Berek of the Windsor Public School Board for his help in making contact with families through public schools and for his patience and valuable suggestions.

Finally, I would like to express my thanks to the families who participated in this research and disclosed personal information about themselves and their family life. I truly appreciated their help. Without their cooperation this research and the knowledge gained from it would not have been realized.

## TABLE OF CONTENTS

	Page
ABSTRACT	iii
ACKNOWLEDGMENTS	iv
LIST OF TABLES	viii
CHAPTER	
I.    INTRODUCTION	
Chronic Pain: Definition and Characteristics	1
Gaps in the Chronic Pain Literature	3
II    REVIEW OF THE LITERATURE	
Impact of Illness on the Family: Theoretical Perspectives and Research Findings	4
Effects of Chronic Pain on Families	8
Family Characteristics of Chronic Pain Sufferers	
Alexithymia, Emotion Expression, and Chronic Pain.	11
Depression and Chronic Pain.	14
Marital Adjustment and Chronic Pain.	18
Family Environment and Social Competence in Children.	21
Family Expressiveness and Development of Social Competence.	22
Parental Depression and Children's Social Adjustment.	25
Marital Adjustment and Social Adjustment in Children.	27
Socioeconomic Status and Social Adjustment in Children.	29
Social Competence in Children of Chronic Pain Sufferers.	30
The Current Study	32
Hypothesis 1.	33
Hypothesis 2.	33
Hypothesis 3.	33
Hypothesis 4.	34
Hypothesis 5.	34
Hypothesis 6.	35
III.  METHOD	
Subjects.	36



## TABLE OF CONTENTS (Continued)

		Page
	Recruitment Procedures.	36
	Matching Procedures.	37
	Characteristics of Sample.	38
	Parental Measures.	
	Alexithymia.	41
	Depression.	44
	Marital Satisfaction.	47
	Socioeconomic Status.	49
	Child Measures.	
	Social Competence.	49
	Procedures.	51
IV.	RESULTS	
	Data Screening and Preliminary Analyses	54
	Demographic Differences Between Groups	55
	Hypothesis 1	55
	Hypothesis 2	56
	Hypothesis 3	58
	Hypothesis 4	60
	Post-Hoc Analyses on the Relationship between Pain Duration and Children's Social Competence	62
	Hypothesis 5	63
	Hypothesis 6	63
	Post-Hoc Analyses on Raw MESSY Scores	64
V.	DISCUSSION	
	Social Competence in Children of Chronic Pain Sufferers.	66
	Depression, Alexithymia, and Marital Satisfaction in Chronic Pain Sufferers.	71
	Predictors of Children's Social Competence.	
	Across Groups.	73
	In the Pain Sample.	73
	Gender Differences in Mother-Child Pairs.	
	Children's Social Competence.	76
	Correlates of Children's Social Competence.	76
VI.	CONCLUSION	79

## TABLE OF CONTENTS (Continued)

	Page
REFERENCES	81
APPENDIX	
A Screening Questionnaire for Pain Group.	93
B Screening Questionnaire for Control Group.	94
C Informed Assent Form for Children in Pain Group.	95
D Informed Assent Form for Children in Control Group.	96
E Consent Form for Parents' Participation.	97
F Release of Information Consent Form.	100
G Demographic Questionnaire for Pain Group.	101
H Demographic Questionnaire for Control Group.	103
I Instructions to Teacher.	104
VITA AUCTORIS	105

## LIST OF TABLES

<u>Table</u>		<u>Page</u>
1	Demographic Characteristics of Chronic Pain Sufferers and Controls	39
2	Pain Characteristics of the Chronic Pain Sample and Related Data	42
3	Means, Standard Deviations, and Group Differences on the BDI, TAS, and SMAT	57
4	Results of the Hierarchical Regression for Total MESSY Scores in the General Sample	59
5	Results of Regression Analyses for the Social Competence of Chronic Pain Sufferers' Children	61
6	Correlations between Variables for Boys and Girls in the Chronic Pain Sample	65

# CHAPTER I

## INTRODUCTION

### Chronic Pain: Definition and Characteristics

Chronic pain has been typically defined as non-malignant pain that has persisted for at least 6 months (Dura & Beck, 1988; Hendler, 1984). Chronic pain can be constant or recurrent within those 6 months. This definition, however, is not universal, and some researchers have used a less conservative criterion of a duration of one month (Magni, Caldieron, Rigatti-Luchini, & Merskey, 1990). Moreover, chronic pain cannot be attributed to an acute physiological etiology (Dura & Beck, 1988) although some researchers have included cases with organic pathology in their definition of chronic pain sufferers (Feuerstein, Papciak, & Hoon, 1987).

Research on chronic pain has grown rapidly in the past decade and has helped improve our understanding of the psychosocial aspects of this condition. Interest in chronic pain has been fueled by knowledge of its prevalence in the general population and the consequences it engenders in both the sick individual and society as a whole. In the general population, 11% of adult Canadians (Crook, Rideout, & Brown, 1984) and 14.4% of the U.S population between 25 and 74 years old are suffering from chronic pain related to joints or to the musculoskeletal system (Magni, Caldieron, Rigatti-Luchini, & Merskey, 1990).

There is some evidence for a relationship between socioeconomic level and chronic pain. In their national survey of musculoskeletal pain, Magni, Caldieron, Rigatti-Luchini, and Merskey (1990) found that people with chronic pain, as a group, had lower incomes

than other non-chronic pain people surveyed. This finding was confirmed by Crook, Rideout, and Browne (1984) who compared chronic pain sufferers with a group of temporary pain sufferers defined as those who have experienced pain only in the last two weeks. They found that the temporary pain group had a higher modal income and were better educated than the chronic pain group although these differences were not significant. Spouses of chronic pain patients have also reported that one area of impact of chronic pain on their family life was in their financial functioning (Rowat & Knafl, 1985). Finally, people with lower socioeconomic status may be at higher risk for developing chronic pain as shown by Reisbord and Greenland (1985) who found an inverse relationship between education level and reports of back pain in a population-based study. The association between education and back pain was only modest, however, in the unmarried group.

Although some have argued for the possible homeostatic function of chronic pain in a family system (Kunzer, 1986), in general, the psychological and social consequences of chronic pain make it a very disabling condition for the sufferer. Although it is often difficult to disentangle the causes from the consequences of chronic pain, studies have generally suggested that depression is often present in this group of patients. Estimates of depression have varied from one study to another but in their review of the literature, Romano and Turner (1985) reported moderate to high levels of depression in chronic pain samples. Other consequences of chronic pain involve social relationships. Social withdrawal and a decrease in pleasurable activities have generally been found in this group. Philipps and Jahanshahi (1985) reported that patients attending a headache clinic

in London, England avoided a variety of social activities with a range of 75% to 82% avoiding activities such as attending parties and visiting family and friends and 88% preferring to rest instead of engaging in any activity.

The consequences of chronic pain, however, are not limited to the individual. The prevalence of chronic pain has greatly contributed to the spiraling costs of health care and disability pensions. In a comparison of family practice patients and pain clinic patients, Crook and Tunks (1985) found that 23% of the pain clinic patients were employed and 38% disabled as opposed to 52% of family practice patients being employed and 2% disabled. The remaining people consisted of students, retired people or housewives and the two groups did not differ significantly in these categories.

#### Gaps in the Chronic Pain Literature

Chronic pain has important consequences and is therefore a worthwhile topic of study. It is only recently, however, that researchers in this field have begun to look at the consequences of chronic pain on the family. Few studies so far have attempted to uncover how family members of the patient are affected by and cope with this disabling condition in a loved one. Among these few studies, the focus has primarily been on the spouse of the patient and on the marital relationship whereas children have largely been neglected as a focus of research. This neglect of the family, particularly children, needs to be corrected given the growing literature on family systems which underscores how disturbances in the family system, such as illness, affect each family member.

## CHAPTER II

### REVIEW OF THE LITERATURE

#### Impact of Illness on the Family: Theoretical Perspectives and Research Findings

The family is an important unit in which individuals develop in close interaction with other family members. General Systems Theory emphasizes the intimate relation existing between individuals and their family by representing the individual as a subsystem of the family within the hierarchy of natural systems (from the cell to the biosphere). In this model, if change occurs at one level of the hierarchy, other systems in the hierarchy will be affected as well. Thus, illness in a family member has the ability to disrupt the entire family system and therefore, affect other family members (Schwenk & Hughes, 1983).

Family Stress theorists adapted General Systems Theory to better represent family functioning (Doherty & Baird, 1983, p. 29-31). They made the following statements regarding family functioning: (1) The family is more than a collection of individuals. Individuals within the family are connected in such a way that change affecting one family member will affect the entire family system. (2) Families' interaction patterns regulate the behavior of family members. If those interaction patterns are disrupted, individuals' behavior in the family may be disrupted as well. (3) Healthy family functioning refers to the family's ability to adapt to change. Chronic illness may disrupt family interaction patterns and may challenge the ability of the family system to be flexible and adapt to changes (Doherty & Baird, 1983). Thus, illness may impair family functioning and create

family disorganization and conflict and impact on the adjustment of its individual members (Mauksch, 1974).

Rankin and Weekes (1989) emphasized the necessity to study the impact of illness on the family: “ The interdependence of family members,...and the acknowledgment that individuals do not develop in isolation, but rather in step with their “consociates” (family members and others with whom one has close and enduring relationships) underscore the necessity of studying the impact of chronicity on families”. In fact, feelings of distress are often reported in spouses of chronically ill individuals (Ell & Northern, 1990). In a study of dementia patients and their spouses, Lieberman and Fisher (1995) found that spouses’ levels of anxiety, depression and somatic symptoms were directly related to the severity of the patients’ dementia. Finally, Woods and Lewis (1995) studied cancer patients and their families. Length of diagnosis and the amount of illness-related demands made by the cancer patient had a direct negative effect on the marital relationship which in turn affected family coping strategies, mother-child relationships and general family functioning.

Despite these results, some ambiguity persists concerning the impact of illness on the family, with some studies reporting contradictory data. Brown, Rawlinson, and Hardin (1982) have failed to find impaired functioning in families with one parent suffering from chronic stable cardiac disease and found no relationship between adequacy of family functioning and either objective or perceived health status in that sample. This failure to find significant results may have been due to the lack of variability in the sample, the nature of the illness studied which is more intermittent in nature than chronic, and the authors’ reliance on retrospective data. Litman (1974) also reported little effect of illness on family solidarity. Unlike Brown, Rawlinson, and Hardin (1982), however, Litman



found a direct relationship between perceived severity of illness and its impact on family relations, with the impact being positive and negative with equal frequency. He concluded that illness may serve to increase cohesiveness in families with premorbid family disorganization whereas it may impair family relations in those with good premorbid functioning.

Given the importance of family characteristics and family functioning in children's development (Cohn, Patterson, & Christopoulos, 1991; Ladd, 1991; Patterson, Vaden, & Kuppersmidt, 1991) it is not surprising that illness, by disrupting the family system, may put children of sick individuals at risk for maladjustment. Several studies also indicate that parental illness may in fact affect children's social and psychological adjustment (Hammen, Adrian, Gordon, Burge, & Jaenicke, 1987; Hammen, Gordon, Burge, Cheri, Adrian, Jaenicke, & Hiroto, 1987). Adult children of dementia patients were found to show more somatic symptoms as the severity of the dementia increased. Somatic symptoms were related to the amount of care given by children to the patient (Lieberman & Fisher, 1995). Woods and Lewis (1995) reported that disruption of the marital relationship in cancer patients led to impaired mother-child relationships and poor psychosocial adjustment in their children. In another study, 52% of children of Huntington's patients were diagnosed with either conduct disorder or an affective disorder. Children's diagnosis was predicted by parental diagnosis and their rate of antisocial behavior was related to level of disruption in the family (Folstein, Franz, Jensen, Chase, & Folstein, 1983). This study suggests that illness may not directly affect children but may do so by affecting family functioning and parental functioning, as already shown by Woods and Lewis (1995). In their review of the literature on the impact of illness on the family, Armistead, Klein, and Forehand (1995)

concluded that studies consistently describe child functioning in ill groups as poorer than in non-ill groups but that no conclusions could be drawn at this point regarding the effect of specific illnesses. They further proposed a model in which the key link between parental illness and child adjustment is the amount of disruption in parenting directly resulting from parental illness or indirectly through parental depression and conflict which often accompany illness.

Despite strong evidence for the impact of illness on the family, this relationship may vary with several factors, such as age and gender of family members and socioeconomic status of the family. Lieberman and Fisher (1995) reported that female spouses of dementia patients reacted differently to a spouse's illness than male spouses with female spouses reporting more anxiety and depression than males. These findings were supported by Kerns and Curley (1985) who described wives of disabled men as more isolated than husbands of disabled women, which seemed to result from women spending most of their time helping their husband and doing household chores. Likewise, several authors have argued for the importance of the mother in family functioning and the important impact of her illness on the family (Litman, 1974).

Interactions between gender of parent and gender of child may also affect the impact of illness on the family. This was confirmed in a study on the effect of parental cancer on children, where the child's level of distress was related to sex of the sick parent and sex of the child, with adolescent girls of sick mothers showing the highest levels of distress (Compas et al., 1994).

Age has also been linked to differential effects of illness. Rankin and Weekes (1989) reported that families with adolescent children are most at risk to face disruption in

response to parental illness and that men and women of different ages may also react differently to illness in oneself or in a family member, with middle-aged adults showing more difficulties when faced with illness.

The impact of illness may also vary with socioeconomic status (SES). Woods and Lewis (1995) found that in families with a mother diagnosed with breast cancer, SES predicted mother's perception of the mother-child relationship, which in turn predicted the child's social functioning, with high SES leading to better mother-child relations and better child functioning. Furthermore, other studies have reported the protective value of financial resources which seems to help physical recovery by making other resources available (i.e.: professional services) and of education level which protects against negative affect but does not predict overall psychological adjustment during an illness (Funch & Mettlin, 1982).

Overall, these studies suggest that illness may have an impact on other family members, including children. This effect on children may directly result from the illness status of the parent or indirectly from social and psychological characteristics of the sick individual and his or her family, such as depression and conflict. Furthermore, the impact of illness on the family may be mediated by such variables as age, gender and SES.

### Effects of Chronic Pain on Families

The disturbing effect of chronic pain on families has already been stressed:

"Chronic pain in a family member not only has the potential of upsetting the family system, but seemingly has the capacity for exerting a substantial influence on the well-

being of the other family members as well" (Roy, 1992, p. 85). Research on the impact of chronic pain on families has focused mainly on the spouse and the marital relationship. Although most studies assessing the physical and emotional well-being of spouses are correlational in nature, and therefore don't allow inferences about causal relationships, they are still significant sources of information about adjustment in spouses of chronic pain patients. Spouses are often required to take on more responsibilities in the household while at the same time receiving less support and nurturance from their sick spouse (Roy, 1985). Rowat and Knafl (1985) found that a group of highly distressed spouses of chronic pain patients had to take on a role of protector, that is, keep stress levels down for the patient and take on the responsibilities that the sick spouse was not able to fulfill. Role strain is therefore likely to occur in these marriages (Hudgens, 1979). Studies also indicate that spouses of chronic pain patients show higher levels of depression than control groups (Ahern, Adams, & Follick, 1985; Flor, Turk, & Scholz, 1987). Rowat and Knafl (1985) reported that up to 69% of spouses in their study showed emotional disturbances that they attributed to the sick partner and to feelings of uncertainty about family life due to unexpected disturbances associated with chronic pain. Also, 40% of the same sample reported feelings of helplessness. Spouses of chronic pain patients were also found to be more distressed than a control group of non-patients on the Global Severity Index of the Symptom Checklist-90 (Shanfield, Heiman, Cope, & Jones, 1979). Finally, spouses also seem to suffer physical symptoms such as sleep difficulties and headaches (Rowat & Knafl, 1985), especially pain complaints (Flor et al., 1987).

Other adverse effects of chronic pain are on the marital relationship and on the family environment. Marital dissatisfaction has been repeatedly reported in both chronic

pain patients and their spouses. Some researchers have reported significant decreases in marital satisfaction associated with pain (Ahern et al., 1985; Flor et al., 1987), although these samples consisted of male reporters only. Marital dissatisfaction was correlated with the level of psychosocial disability (social withdrawal, lack of communication) of the patient, but may also be due to the decrease in sexual activity often reported by chronic pain couples (Ahern et al., 1985; Flor et al., 1987). Likewise, general family functioning seems to be affected by chronic pain. The family environment has been described as less cohesive, less expressive and with more conflict than in control groups (Dura & Beck, 1988; Hudgens, 1979). Furthermore, of the 50% of spouses of chronic pain patients classified as highly distressed, 3/4 reported disruptions in 4 or more areas of family life, including their relationships with children and marital partners, family activities, and financial functioning (Rowat & Knafl, 1985).

Given these disturbances in parental emotional adjustment, the marital relationship, and family environment, we can expect children of chronic pain sufferers to be adversely affected. However, few studies have addressed this issue. Rickard (1988) reported more teacher-rated behavior problems in children of chronic pain patients than in control groups of children of diabetic patients and healthy parents. She hypothesized that these were the result of observational learning of paternal illness behaviors, although she did not provide evidence for her view. Dura and Beck (1988) found that children of chronic pain sufferers in the community tended to have lower social skills, more behavior problems and more days with illness complaints than children of diabetic patients although these results failed to reach significance. Unfortunately, no attempt was made to find predictors of child functioning. Mikail and Von Baeyer (1990) observed chronic headache sufferers and their

children and found significantly higher levels of somatic focus and delinquency as well as a higher occurrence of headaches in these children than in children of pain-free controls. They reported several moderate correlations between parental symptoms and child symptoms but did not elaborate on their meaning. Their study was also limited by their reliance on parental reports for most of their measures of child functioning and by a small sample. Chun, Turner, and Romano (1993) were the first to undertake the task of finding correlates of child adjustment and stressed the need to identify mediating variables between parental chronic pain and child functioning. In their study of pain clinic patients, they found level of parental disability to be a significant predictor of child adjustment whereas parental depression and marital adjustment were not. Chun et al. (1993) were also the first to look at possible interaction effects of patient and child gender in predicting child adjustment. They reported a significant effect of patient gender in predicting parent-rated social competence, with children of male patients being less socially competent than those of female patients. Also, they found a significant effect of child gender on teacher-rated social competence with male children being rated as less competent than their female counterparts. Together, these previous studies suggest a need to further assess child functioning in chronic pain families and to identify potential parental correlates of child adjustment.

### Family Characteristics of Chronic Pain Sufferers

Alexithymia, emotion expression, and chronic pain. A characteristic of chronic pain patients that may have implications for family adjustment, particularly for children's social-emotional development is alexithymia. Alexithymia ("no words for emotions") was

first proposed by Sifneos (1978) as a characteristic of individuals with psychosomatic illnesses. He used this term to describe patients who lack the ability to fantasize, are constrained emotionally, have difficulties in interpersonal relationships and, most strikingly, cannot find the appropriate words or labels to describe their emotions. Such patients have difficulty recognizing their own emotions and expressing them verbally to others. In their description of the "pain-prone" personality, Blumer and Heilbronn (1981) described the chronic pain patient as generally stoic and lacking the ability to verbalize feelings. Research on chronic pain patients with no organic explanation for their pain has been consistent with Sifneos' description of psychosomatic individuals. These patients have generally been described as alexithymic and as having difficulty expressing emotions (Pinsky, 1978). Mendelson (1982) reported that 47% of chronic pain patients referred for treatment showed alexithymic features, although he relied on the MMPI subscales of alexithymia which have poor internal consistency and lack validity. However, 53% of patients with somatoform pain disorder were considered alexithymic using the Toronto Alexithymia Scale-20 items (Cox, Kutch, Parker, Shulman, & Evans, 1994) and nearly 100% of low back pain patients were alexithymic as determined by two clinicians based on tape-recorded protocols of the Thematic Apperception Test (Sivik & Hosterey, 1992). Using three different measures of alexithymia, other researchers found that chronic pain patients were more alexithymic than both chronic non-painful disease patients (Joukamaa & Nurmiko, 1987) and a control group of healthy people (Sriram, Chaturvedi, Gopinath, & Shanmugham, 1987). This research suggests that chronic pain patients, along with other psychosomatic groups, show a lack of awareness of their own emotions, have difficulty describing them in words, and are unable to engage in fantasy.

Some studies have also focused on the ability of chronic pain sufferers to express their emotions freely and have found a general tendency to inhibit emotional expression. A general model of chronic pain patients as repressing emotional conflicts, especially guilt, and channeling these repressed feelings through somatic symptoms has been described by many researchers. Engel (1959), in his famous paper "Psychogenic Pain and the Pain-Prone Patient" was one of the first to propose a role for repressed emotions in the development of chronic pain. He argued that pain constitutes a conversion symptom for repressed guilt. This idea has been supported by other researchers and by observations made about the beneficial effect of emotion expression on pain symptoms (Kaufman & Aronoff, 1983). Although this model has mainly been refuted over the years because of the difficulty of establishing a causal relationship between repressed emotions and chronic pain, it is still recognized that chronic pain patients have difficulty verbally communicating their emotions to others. Pilowski and Spence (1975), using the Illness Behaviour Questionnaire, reported that a chronic pain group had significantly more anger inhibition than a comparison group of "explained pain" patients. These findings, however, were based on a single item asking "When you get angry, do you tend to bottle up your feelings?" Other studies based on clinical observations lend support to these findings (Wetchler, 1992). An analysis of group psychotherapy with depressed females reporting chronic pain provided strong evidence for a lack of emotional expression in this group (Corbishley, Hendrickson, Beutler, & Engle, 1990). The goal of psychotherapy was to enhance expression of anger and other negative emotions. In a comparison with a non-pain depressed group, the chronic pain patients showed more difficulty with spontaneous expression of anger and less range of affect. Furthermore, whereas depressed patients



acknowledged their feelings and admitted suppressing them, the depressed pain group was more likely to report not being aware of their feelings or to deny them completely. It is therefore clear that chronic pain patients tend to inhibit emotional expression although their reason for doing so may vary, with some lacking the ability to be aware of and express their emotions while others refrain from communicating their emotions as a result of a conscious effort to suppress them.

Depression and chronic pain. Another characteristic often reported in chronic pain patients, and which may affect their children, is depression. The association between chronic pain and depression has been repeatedly documented in the literature and different theories about the nature of this relationship have been postulated. Romano and Turner (1985), in their review of research done on depression and chronic pain, reported that rates of depression found in previous studies of chronic pain ranged between 31% and 100%. The majority of studies (Doan & Wadden, 1989; Kerns & Turk, 1984; Magni, 1987) agree on a prevalence rate of at least mild depression in between 30% and 60% or about two thirds of this population. These are considerably higher than rates reported in the U.S. general population of 5% to 9% for females and 2% to 3% for males (American Psychological Association, Diagnostic and Statistical Manual of Mental Disorders (4th ed.), 1994). They are also higher than rates of depression found in pain-free individuals in the Magni, Caldieron, Rigatti-Luchini, and Merskey (1990) national survey of the United States' general population which indicated an 8% depression rate.

The discrepancy in prevalence rates across studies is mainly due to methodological variations, with rates varying with the sampling method and diagnostic

tools used. For example, most studies done so far have looked at clinical samples of chronic pain, that is, patients who have been referred to pain clinics. It has been argued (Magni, 1987) that these patients represent more severe cases who therefore might be expected to suffer more psychologically. Higher rates of depression are therefore expected in these samples compared to a general population of chronic pain sufferers. In fact, Magni (1984) conducted an epidemiological study of chronic pain in the general population and found that only 4.3% were depressed. However, in a national survey of the general population in the United States, Magni et al. (1990) reported that chronic pain was a significant elevator of depression scores and found that chronic pain sufferers were more depressed than non sufferers with 18% of them and 8% of non sufferers being depressed. These results, although higher than previous findings, may still be an underestimate of the actual rate of depression since the authors defined chronic pain as pain lasting at least one month. This criteria is considerably less conservative than the usual one where a pain duration of at least six months is required and less severe cases were therefore included. This may have decreased the proportion of depressed cases within the sample.

The higher incidence of depression in chronic pain populations may not be specific to chronic pain and may be found in other populations. Ahles, Yunus, and Masi (1987) compared a group of patients suffering from primary fibromyalgia syndrome, a condition characterized by multiple, diffuse aches and pains without an identifiable organic pathology, with a control group of rheumatoid arthritis where pain is known to have an organic cause. They found no significant difference between these two groups' scores on the Zung Self-Rating Depression Scale (Zung, 1965), with both groups reporting more

depressive symptoms than a group of non-pain controls. Hudson, Hudson, Pliner, Goldenberg, and Pope (1985), however, did find that both DSM-III diagnoses of major affective disorder and family history of major affective disorder were higher in a fibromyalgia group than in a rheumatoid arthritis group.

In summary, although methodological issues make it difficult to draw clear conclusions about the nature of the relationship between chronic pain and depression (Romano & Turner, 1985), there is still considerable agreement on the presence of depressive symptoms in chronic pain populations, both in clinical samples and in the general population. However, the extent and specificity of this relationship may vary between different types of chronic pain populations and depression may not always coexist with chronic pain.

Some theorists postulate that chronic pain is a variant of depression and others argue that depression is a reaction to the difficulty of living with pain. Lefebvre (1981), in his study of depression in low back pain patients, found that these patients had general cognitive distortions similar to those found in depressed non-pain populations. However, the pain group also had cognitive distortions specifically related to their pain, not present in the depressed non-pain group, which contributed greatly to their depressed mood. Both a general cognitive vulnerability to depression and an effect of pain on the cognitive functioning of low back pain patients may be responsible for their depression.

Blumer and Heilbronn (1982) argued for the concept of a "pain-prone" person. They described such a person as one suffering from depressive symptoms pre-dating the onset of pain and masked by this somatic symptom. They found 83% of their sample of chronic pain patients were depressed according to a battery of projective tests, and

showed other symptomatology of depression such as sleep disturbances. However, the authors provided no evidence for the onset of depression pre-dating or causing the appearance of pain symptoms.

A biological connection between depression and pain seems to exist (Magni et al., 1987) but no clear causative relationship can be inferred from this biological similarity between the two disorders. These authors reported that 68.7% of chronic pain patients in their sample had at least one first-degree relative affected by depression or depressive spectrum disorders. These rates are meaningful given the absence of major depression or a history of it in their sample. Interpretation of these findings, however, is limited by the lack of corresponding data from a control group. Still, other researchers have compared rates of depressive spectrum disorders in first-degree relatives of chronic pain patients versus healthy controls and have reported significantly lower rates in relatives of controls than in those of chronic pain sufferers (Schaffer, Donlon, & Bittle, 1980). Higher familial prevalence rates of major affective disorder have also been found in a fibromyalgia group compared to a rheumatoid arthritis group (Hudson et al., 1985). Furthermore, 64% reported the onset of depression to be at least 1 year before that of fibromyalgia. Although only a few studies have been conducted so far, a genetic vulnerability to depression seems to be present in pain patients and may be expressed in a chronic pain syndrome.

Evidence for the development of depression following chronic pain has also accumulated. Living with a chronic condition, in general, has been found to adversely affect the psychological well-being of patients. The presence of depression in other medical populations has already been documented, with reported rates ranging between

12% and 56% (Romano & Turner, 1985). In a sample of 71 chronic low back pain patients, 83% met Research Diagnostic Criteria for either major depression, minor depression or intermittent depression (Krishnan et al., 1985). Most of them reported developing depression after the onset of pain, providing support for depression as a reaction following the development of chronic pain. Turk and Salovey (1984) have also argued for the secondary nature of depression in their critique of Blumer and Heilbronn's article "Chronic pain as a variant of depressive disease: The pain-prone disorder" (1982). Turk and Salovey disputed the conclusions arrived at by Blumer and Heilbronn who argued for the existence of a pain-prone disorder where pain symptoms are the result of a "masked depression". Turk and Salovey pointed to the lack of adequate evidence provided by the authors for this concept as well as to the methodological flaws and circular reasoning in their study. They offered more parsimonious alternatives for Blumer and Heilbronn's findings, instead arguing that depression is secondary to the development of pain. Despite the impressive amount of research done on the connection between chronic pain and depression, results are conflicting and no clear conclusion as to the nature of the relationship between chronic pain and depression may be reached at this time (Gupta, 1986).

Marital adjustment and chronic pain. Roy (1985) has conducted extensive research on the psychological and social characteristics of chronic pain sufferers and has reported on the marital difficulties often present in this group. He described marital maladjustment in these patients as pervasive and resulting from several changes that occur in the patient and his or her spouse as a result of pain. Role changes occur in these

couples where the spouse is faced with more responsibilities, including financial ones, in order to compensate for the patient's disability and loss of role. This can create psychiatric distress, such as depression, in the spouse who is faced with increased stress.

Communication patterns between patient and spouse are also affected whereby anger often predominates and a reduction or elimination of sexual activity occurs (Roy, 1987).

Thomas and Roy (1989) measured marital satisfaction in chronic pain patients and their spouses using a measure of family adaptability, which indicates the ability of the couple to change in response to stress, in this case, pain. Their findings indicated that the couples were functioning in the moderately dysfunctional range with a loss of role and intimacy, indicating unsatisfactory marital relations. Further studies have looked at marital adjustment in these populations. Although some have failed to discover marital problems (Feinauer & Steele, 1992), a majority report marital and sexual difficulties as well as deterioration in the relationship (Maruta & Osborne, 1978) and the consistency in the measure of marital satisfaction used across studies support the reliability of these findings. Using the Marital Adjustment Scale (Locke & Wallace, 1959), over half of a male sample of chronic pain patients and their spouses reported marital dissatisfaction with a third of them being severely dissatisfied (Kerns & Turk, 1984). Using the same measure of marital adjustment, other studies reported that between 28% and 39% of patients and between 39% and 51% of spouses were dissatisfied (Ahern et al., 1985; Flor et al., 1987). However, the average level of marital adjustment in this last study was in the normal range indicating overall satisfaction but with a wide range of variability. These findings may be explained by Feinauer and Steele's findings about "caretaker marriages" whereby both patient and spouse adapt to the roles of patient and caretaker respectively, and get

satisfaction out of these roles so that no stress or conflicts arise in the marital relationship. These last findings are consistent with reports on the potential stabilizing function of pain (Kunzer, 1986) and illness (Armistead et al., 1995).

Couples vary in how they cope with stress and in their ability to adapt in response to pain and therefore vary in their level of marital dissatisfaction. In fact, marital satisfaction in both patients and spouses has been found to correlate with measures of spouse support (Kerns & Turk, 1984), indicating that as the spouse accepts the caretaker role, marital dissatisfaction is less likely. Still, pain is a powerful stressor as already argued by Roy (1985) and marital difficulties seem to arise in a significant proportion of couples faced with a chronic pain syndrome. This may be due, in part, to the effect of a patient's depression rather than to chronic pain alone (Mohamed, Weisz, & Waring, 1978) since depression is often observed in this patient group.

In summary, chronic pain patients have been described as lacking awareness about their emotions and as having difficulty expressing them, a characteristic also referred to as alexithymia. Depression and marital difficulties have also often been observed in this group. The way in which these parental characteristics interact is unclear, however, and their relationship may vary in different family systems. Alexithymia may be either primary and be a predisposing factor for the development of diseases or it may appear as a protective factor or defense mechanism in response to being ill. As such, it is referred to as secondary alexithymia and may be transitory or chronic depending on the acute or chronic nature of the illness after which it developed (Freyberger, 1977). With regard to the relationship between alexithymia and depression, they have been shown to be closely related (Parker, Bagby, & Taylor, 1991) and the relationship between alexithymia and

marital adjustment may also be deducted from evidence for the importance of communication and self-disclosure in marital satisfaction (Brown, Rawlinson, & Hardin, 1982; Honeycutt, 1986; Waring, McElrath, Lefcoe, & Weisz, 1981). Finally, correlations between depression levels and marital adjustment have been reported in a sample of cancer patients (Lewis, Hammond, & Woods, 1993) and Ahern et al. (1985) found that depressed spouses of chronic pain sufferers reported a greater need for changes in their marriage than non-depressed spouses suggesting marital maladjustment in those families in which chronic pain and depression coexist. It is clear, therefore, that these problems may be interrelated in some way in a family system, but the particular sequence in which they appear in a given system is unknown and may vary from one family to another.

These aspects of the chronic pain family must influence family members, particularly children who grow up and learn by observing and interacting with their parents. In fact, previous research has linked these parental characteristics to social competence deficits in children.

### Family Environment and Social Competence in Children

There is increasing recognition that social competence and the way one interacts with peers is greatly influenced by the family system. Ladd (1992) described several ways in which a child's peer system may be influenced by family relationships and processes. He talked about both direct and indirect pathways by which the family, particularly parents, affects the child's peer relations. Indirect pathways consist of characteristics of the family environment and of the relationships between its members to which the child is exposed. Such characteristics as the quality of child-parent attachment and child-rearing practices



are examples Ladd provides for indirect pathways between family and peer relations.

Parents may also directly influence their children's social competence by being actively involved in their socialization, monitoring their social contacts, and teaching them how to act around their peers.

Family expressiveness and development of social competence. A characteristic often absent in chronic pain families, family expressiveness or the extent to which emotions are openly expressed between family members, seems to be an indirect pathway through which parents influence their children's social competence. Denham and Grout (1992) studied the effect of maternal expressiveness on children's prosocial behavior and reported a positive relationship between maternal level of expressiveness and children's prosocial behavior, except when negative emotions were expressed. This last finding is supported by several studies where parental negative emotional expression was associated with lower peer acceptance (Carson, 1991). These studies therefore suggest that emotion expression in the family is an important determinant of social competence in children and that specific types of emotions affect peer relations differentially.

A model of the factors involved in the association between family expressiveness and children's sociometric status was proposed by Parke and his colleagues (Parke, Cassidy, Burks, Carson, & Boyum, 1992). They argued that family expressiveness, through parent-child interactions, led to the development of "affect management skills" important in successful peer relations. This model was based on the assumption that adequate social relations require one to be able to understand others' emotional displays and to communicate clearly one's own emotions. Affect management skills therefore

consist of one's ability to identify and understand others' emotions as well as the ability to express and regulate one's emotions. Several studies provide support for this model. According to social learning theory and the importance of parents as models of behavior, it is not surprising that children's ability to express emotions is greatly influenced by their parents' emotional expressiveness. This association between parental and child's expressiveness may be specific to the emotions expressed, with mothers' positive emotional expression being associated with children's positive expressiveness and mothers' negative emotion expression being associated with children's negative expressiveness (Denham, 1989).

Likewise, emotion understanding is affected by parental level of expressiveness. The degree to which parents express emotions determines individual differences in children's ability to understand emotions (Denham, Zoller, Couchoud, & Holt, 1994) as supported by several studies (Daly, Abramovitch, & Pliner, 1980; Kalliopuska, 1985). Negative emotions expressed by parents, however, result in children's reduced ability to understand emotions, as supported by studies where maternal anger was negatively correlated with child's emotion recognition ability (Dunn & Brown, 1994). Also, Halberstadt (1986) reported low family expressiveness to be associated with better decoding ability of posed emotions. These results, however, may not be a valid representation of the relationship between family expressiveness and decoding ability in real-life situations, considering that family expressiveness was measured retrospectively in a sample of undergraduate students, that emotions were posed rather than spontaneous, and that undergraduates have already been exposed to other socialization influences that may mediate the relationship between family expressiveness and decoding ability.

A major criticism of all these studies is their emphasis on maternal influence which restricts the generalizability of their findings since most children are under both parents' influence and some gender specific effects may be involved. However, it seems reasonable to conclude, based on the overall consistency of previous research findings, that parental emotion expression contributes to the development of affect management skills in their children, namely the ability to express and understand emotions adequately.

In the second part of their model, Parke and his colleagues argue for the link between affect management skills and social competence. Several studies have provided support for the importance of both emotional encoding and decoding ability in one's ability to interact effectively with peers. Socially competent 9 and 12-year old children were better at both encoding and decoding facial expressions compared to those who were lower in social competence (Custrini & Feldman, 1989). This effect, however, was mostly due to a group difference between girls. That is, encoding and decoding ability seemed to be a more important determinant of social competence in girls than in boys. The authors argued that these results are consistent with the different socialization of girls and boys, with girls being taught to value the communication of internal states such as emotions in their interaction with others whereas boys resort more to overt behaviors. Such a gender difference in the relationship between social competence and affect management skills was corroborated in other studies (Feldman, White, & Lobato, 1982).

Further studies lend support to the model by Parke et al. (1992). Children's encoding ability was found to be associated with a general measure of their social skills as assessed by two adults familiar with them (Feldman et al., 1982). Children's ability to recognize others' emotions has also been shown to be an important determinant of

prosocial behavior and general peer competence (Denham, 1989; Denham et al., 1990).

However, Feldman et al. (1982) failed to find a relationship between this same measure of social skills and decoding ability in a group of normal children. Yet, they found that emotionally disturbed children, who are assumed to be lower in social skills, were not as efficient in decoding others' emotions as were a group of normal children, suggesting a possible relationship between these two variables.

From this extensive literature review, it can be concluded that the degree of emotional expressiveness in the environment of children greatly affects their affect management skills, which in turn affects whether they effectively interact with others. This suggests the need to monitor the social skills of children living in environments which do not encourage expression of one's emotions.

Parental depression and children's social adjustment. Another characteristic of chronic pain patients, depression, adversely affects their children's social functioning. Research on the adjustment of children of depressed parents reveals deficits in social competence that seem to be linked to the parenting style of depressed individuals and to other associated factors. Depressed parents are less effective in their interactions with others, including their children (Laroche, 1986) and they are less emotionally expressive with their newborns (Bettes, 1988). They are also restricted in their behavior and more irritable which is likely to elicit less positive relationships with others (Downey & Coyne, 1990). Depressed parents may also be inadequate models of social competence since they seem to lack social skills themselves (Libet & Lewinsohn, 1973).

Several studies report social adjustment problems in the offspring of depressed parents. Children of depressed mothers score lower on teachers' ratings of popularity (Goodman, Brogan, Lynch, & Fielding, 1993) and 5-year old children of depressed mothers show more externalizing (i.e.: aggression) and internalizing (i.e.: social withdrawal) behavior problems than children of well mothers, with boys being more at risk for both types of behavior problems than girls (Zahn-Waxler, Iannotti, Cummings, & Denham, 1990). Children's behavior problems were also more stable over time in the depressed group, with aggressive behavior against the environment at age 2 being a significant predictor of externalizing behavior problems at age 5. On the other hand, for children of non-depressed mothers, behavior problems at age 2 were not as good a predictor of externalizing behaviors at age 5. These results therefore indicated less persistence of behavior problems in the non-depressed group over time. Furthermore, in their observations of mother-child interactions, Zahn-Waxler, Iannotti, Cummings, and Denham (1990) found that depressed mothers were less likely to encourage activities that facilitate peer relations for their child, such as playing with other children. The authors concluded that depressed mothers, by being introverted, socially withdrawn and ineffective in their social relations, are likely to transmit these problems to their children which will adversely affect their peer relationships. Maternal history of depression (both current and in remission) is also associated with both mothers' and teachers' ratings of child behavior problems on the Child Behavior Checklist (Richters & Pelligrini, 1989). Furthermore, these mothers are likely to report more child behavior problems as their depressed mood increased, replicating previous findings (Goodman, 1987).

A distinction has been made between current depressive symptoms and a diagnosis of major depression as predictors of children's social competence. Current maternal level of depressive symptoms, as measured on the Beck Depression Inventory, is a better predictor of maternal and teachers' ratings of child behavior problems and social competence than a diagnosis of major depression (Hammen et al., 1987).

It is not clear whether the social maladjustment of children of depressed parents is specific to that group. In other studies, the children of depressed parents have been found to be similar to children of other psychiatrically ill parents, such as schizophrenics (Goodman, 1987). However, it has been shown that a mediating factor in that relationship is the marital discord often present in marriages with a depressed spouse, but that this mediating effect of marital discord is specific to depression and is not found in schizophrenic mothers (Emery, Weintraub, & Neale, 1982). Goodman et al. (1993) also lend support for a multiple risk factor model of child behavior where depression alone may not always be associated with lower social functioning in the child, but along with concurrent factors such as marital discord or paternal diagnosis is likely to adversely affect the child. We can argue as well, following this model of multiple risk factors, that depression associated with chronic pain is likely to have a negative impact on children's social competence.

Marital adjustment and social adjustment in children. It has been documented that the quality of the marital relationship, often poor in chronic pain populations, affects children's social adjustment. There are two ways in which the marital relationship can affect children's social competence (Bryant & DeMorris, 1992). First, social adjustment

can be influenced through overt conflict to which the child is exposed and which provides him or her with poor models of behavior and a stressful environment. Second, it can be affected by a disruption in parent-child relationships (Emery & O'Leary, 1984).

It is important to distinguish between marital dissatisfaction and marital conflict as predictors of child adjustment. Although measures of marital adjustment are correlated with measures of open conflict (Emery & O'Leary, 1982), and although the former is associated with problem behaviors in children (Emery, 1982), it seems that marital conflict, particularly overt conflict, is a better predictor of behavior problems as measured on both the Externalizing-Internalizing dimensions of the Child Behavior Checklist and the Problem Behavior Checklist (Johnston, Gonzales, & Campbell, 1987; Porter & O'Leary, 1980). Grych and Fincham (1990) reviewed the literature on this relationship and concluded that marital conflict was associated with a range of behavior problems of overcontrol and undercontrol as well as with general measures of social competence in children. The relationship between marital conflict and children's social competence may vary, however, depending on whether social competence is independently assessed or self-reported (Long, Forehand, Fauber, & Brody, 1987).

Gender differences have been reported in the relationship between children's social competence and both marital dissatisfaction and marital conflict (Grych & Fincham, 1990; Peterson & Zill, 1986) with boys and girls being more likely to have behavior problems of undercontrol and overcontrol, respectively. Some studies have also found that although boys' behavior problems were predicted by marital maladjustment and conflict, girls' behavior problems were not. Both boys and girls were equally exposed to and aware of these marital problems, but were differentially affected by them (Emery &

O'Leary, 1982). In summary, research findings indicate that marital dissatisfaction, and more particularly marital conflict, are associated with socialization problems in children living in such a disrupted familial environment, but that these may affect boys and girls differentially.

Socioeconomic status and social adjustment in children. Socioeconomic status (SES), as measured by either income level or education level, or both, has been associated with several measures of social adjustment. Ladd (1991) developed a taxonomy of the different pathways between the family and children's peer relations. Based on his review of the literature, he described the economic milieu of the family as an important variable influencing the quality of children's peer relations. In fact, Patterson, Vaden, and Kupersmidt (1991) studied the relationship between peer rejection status and family background in elementary school children and reported that low parental income was one of the most important predictors of peer rejection. Furthermore, in a related study, Patterson, Griesler, Vaden, and Kupersmidt (1992) concluded that children who came from low-income housings had fewer companions for activities outside of school than children from more affluent homes and had even fewer companions for in-home activities. It therefore seems that economic disadvantage may put children at risk for social isolation. Patterson et al. (1992) offer some hypotheses, only indirectly supported by literature findings, for possible mediating variables between economic circumstances of the family and children's social adjustment. For example, life transitions (moving, divorce) often occur concurrently with economic hardship and may be responsible for the relationship between low SES and children's peer relations. Also, family interactions and family



processes in low-income families may be different than in higher-income families although this may not always be the case (Maziade, Bernier, Thivierge, & Cote, 1987). Based on these findings, it is likely that SES affects in some way children's social functioning and it is therefore important to take this variable into account when studying children's peer relations.

### Social Competence in Children of Chronic Pain Patients

Since the familial environment is a powerful influence on children's social development, children of chronic pain patients may show a deficit in social skills. As reported before, the chronic pain family has been described as alexithymic, depressed, and having marital difficulties. Each of these parental characteristics has also been linked to social competence deficits in children. Alexithymic pain patients are unlikely to express emotions clearly or even understand their own and others' emotions. As a result, they may not provide their children with an adequate socialization experience. Both parents may also be depressed which, along with marital dissatisfaction, may increase the risk of social problems in the child. Although most studies on the marital relationship of chronic pain patients have measured spouses' satisfaction rather than amount of conflict, there often is conflict in the family functioning of these patients (Dura & Beck, 1988) as well as behavior control problems (Roy, 1987), and disturbances in parent-child relationships (Rowat & Knafl, 1985), all of which are associated with behavioral problems in children. It is therefore expected that children of chronic pain patients will have social competence deficits resulting from the characteristics of the sick parent and of the family context.

Prior findings have already suggested that children of chronic pain patients may have social competence deficits and behavior problems (Chun et al., 1993; Rickard, 1988).

Social competence has been identified as a protective factor against illness, with poor social competence being a very strong predictor of psychiatric prognosis, including depression (Wierzbicki & McCabe, 1988) and of outcome across a wide range of disorders (Harder et al., 1990). Social competence has also been associated with better social support (Cohen, Sherrod, & Clark, 1986) which, in turn, is a protective factor for health (Cassel, 1976) and has a stress-buffering effect (Cohen et al., 1986). Schwartzman (1985) stated that family socialization, by influencing the development of social skills, also impacts on the physical health of children and numerous studies have supported this view. Blechman, McEnroe, Carella, and Audette (1986) reported that children of depressed caregivers who lack social competence with peers are at higher risk of developing depression later than children with adequate social skills. Similar findings by Zahn-Waxler et al. (1988) show that two-year-old children of manic-depressive parents who demonstrated poor social skills were at higher risk for several psychiatric diagnoses by age six. These findings suggest that social competence, especially for children of maladjusted parents, may be a protective factor in the development of these children. Children of maladjusted parents with social skills deficits may therefore be at higher risk for health-related problems than other children.

A lack of social competence in children of chronic pain patients may put them at higher risk for developing chronic pain themselves thereby reproducing the familial cycle of chronic pain. Social competence may therefore be a determining factor in whether children of chronic pain patients develop chronic pain or not. Thus, findings about the

social competence of these children have important implications for their later adjustment and in understanding the cycle of chronic pain development within families.

### The Current Study

The current study was designed to elaborate on previous studies which have looked at the impact of chronic pain on children. Most studies conducted so far (Dura & Beck, 1988; Rickard, 1988) have simply looked for group differences in the functioning of children from chronic pain families and pain-free families without attempting to provide explanations for differences observed. Chun et al. (1993) did attempt to identify potential predictors of children's functioning in chronic pain families but failed to find significant effects for depression and marital adjustment as predictors of child competence. Furthermore, Chun et al. (1993) neglected to look at the potential importance of alexithymia in the relationship between parental chronic pain and child functioning. Also, their findings may have been limited by methodological shortcomings, such as parents selecting which child would participate in the study.

In the current study, children of chronic pain patients in the community were compared to children of healthy, pain-free parents on measures of social competence. This study expanded on previous research by looking at a variety of direct and indirect links between chronic pain and child social competence. Specifically, the direct relationship between pain status and social competence was assessed and parental alexithymia, depression, and marital difficulties were evaluated as potential indirect links between chronic pain and child social functioning. The predictive value of pain duration, pain intensity, and length of time for which a child is exposed to the parent's pain were

also observed. Furthermore, due to evidence on the interaction between child gender and the impact of parental characteristics (Compas et al., 1994), differences between mother-daughter and mother-son pairs in the chronic pain group were assessed. Specifically, these pairs were compared on levels of child social competence and on predictors of child social competence.

Hypothesis 1. Based on studies conducted so far and on a body of literature providing support for the relationship between parental characteristics present in chronic pain families and children's social competence, it was expected that children of chronic pain patients would show a deficit in social competence compared to a group of control children from families without chronic pain.

Hypothesis 2. Given previous findings on the high levels of depression (Kerns & Turk, 1984), alexithymia (Sivik & Hosterey, 1992), and marital difficulties (Ahern et al., 1985) found in chronic pain sufferers, it was expected that the chronic pain sample in this study would differ from the control group on these variables. Specifically, higher levels of depression, alexithymia, and marital dissatisfaction were expected in this group.

Hypothesis 3. Despite Chun et al.'s (1993) findings suggesting the lack of predictive value of depression and marital adjustment for children's behavior problems, it was expected that parental characteristics of alexithymia, depression, and marital maladjustment would be significant predictors of social competence in children when

groups are combined. It was also suggested that pain status would be a predictor of children's social competence.

Hypothesis 4. As studies on the impact of illness have already suggested, it may be that illness status affects children indirectly by altering the quality of family relationships and the well-being of parents (Armistead et al., 1995; Folstein et al., 1983). It was expected that depression, alexithymia, and marital satisfaction in chronic pain sufferers would be significant predictors of their children's social competence. Furthermore, it was expected that social competence would be predicted by pain intensity and duration. Although no prior studies have looked at the length of time for which a child has been exposed to the parent's pain nor how this contributes to child functioning, it was expected that this variable would be an important factor in the relationship between parental chronic pain and child social competence.

Hypothesis 5. Several studies have looked at the social competence of children exposed to similar parental characteristics (i.e. depression) that children of chronic pain sufferers may be exposed to. They have reported, in some cases, more behavior problems in boys than in girls (Zahn-Waxler et al., 1990). Male children of chronic pain sufferers were also rated by teachers as less socially skilled than female children (Chun et al., 1993). Child social competence may therefore be different according to child gender, with girls of mothers with chronic pain showing more social skills than boys.

Hypothesis 6. Boys' social competence may be predicted by different parental characteristics than girls' social competence. Previous studies, for example, have shown emotion expression to be a more important determinant of girls' social competence than of boys' social competence (Custrini & Feldman, 1989). The ability of parents to express emotions may therefore affect girls more than it does boys.

## CHAPTER III

### METHOD

#### Subjects

Recruitment procedures. Support groups for injured workers, chronic headache sufferers, and fibromyalgia sufferers, located in Windsor, were contacted and volunteers were recruited from those groups. Also, posters advertising for participants were placed in a variety of medical, physiotherapy, and chiropractic clinics in the Windsor area and students attending the University of Windsor and St-Clair College were also reached through announcements in classes and posters. Finally, letters were sent to parents of children in junior kindergarten through grade 8 attending several public schools in Windsor and posters were put up in some child care centers.

Chronic pain sufferers were included in this study based on the following criteria: (1) Pain has been present for more than six months (Dura & Beck, 1988); (2) Pain is not due to a chronic disease such as cancer or multiple sclerosis, for example. These criteria define the chronic pain syndrome and are similar to criteria used in previous studies (Beutler et al., 1988; Dura & Beck, 1988); (3) Participants have children between the ages of 4 and 14 in junior kindergarten through grade 8. This age range was selected for two reasons: (i) The Teacher's Rating Form of the Matson Evaluation of Social Skills for Youngsters can be used to assess their behavior; and (ii) They are still in elementary school and therefore have regular contact with a teacher who can fill out the rating form. If more than one child met those criteria, all were tested in order to facilitate later matching of the chronic pain and control parent-child dyads on demographic characteristics. Only one child per family was ultimately included in the data analysis.

Inclusion criteria (4) required that children have lived at home with the chronic pain sufferer all their life and (5) Other family members of the chronic pain sufferer, including children, are free of any chronic illnesses or mental disorders. For practical reasons and the need for an adequate sample size, asthma was made an exception to criteria (5) unless it was described as severe. Also, children with behavioral disturbances such as conduct disorders were also included since these symptoms may reflect poor social competence and the exclusion of this group could therefore have biased the results.

Participants were included in the control group based on the following inclusion criteria: (1) They have never been in pain for more than six months; (2) They have children between 4 and 14 who are in junior kindergarten through grade 8; (3) Children have lived with the parent being assessed all their life (4) All family members are healthy (no chronic illness or mental disorder). Participants who reported being depressed were included since depression is a variable of interest in this study and children with behavioral disturbances or asthma were also included for reasons outlined previously.

Matching procedures. In the end, of the 20 pain families and 24 control families who participated, 20 parent-child pairs in each group were included in the analyses after each pair in the pain group was matched on age and sex of parent and age and sex of child with a pair in the control group. Matching pairs in terms of age was done within a range of 5 years or less. For example, a 36-year old female chronic pain sufferer and her 7-year old son were matched with a 32-year old female in the control group and her 6-year old son. These matchings were made in light of literature findings stressing the interaction effect of sex of parent and sex of child in the impact of illness on children (Compas et al.,



1994), findings which were also found in studies looking at the functioning of children in chronic pain families (Chun et al., 1993). Finally, age of parent and child were also described as important variables mediating the effect of illness on the family (Rankin & Weekes, 1989). Previous studies which have looked at the impact of chronic pain on children have matched the groups on several variables, including sex and age of parent and sex and age of child (Chun et al., 1993; Dura & Beck, 1988; Rickard, 1988) but none of them have matched specific parent-child dyads on all these variables at once. These pairings will allow for clearer conclusions about differences in the social competence of children in the two groups, unbiased by demographic variables.

Characteristics of sample. After matching, there were 18 mothers and 2 fathers in each group, with 10 male children and 10 female children in each group. The average parental age in the chronic pain group was 35.8 (range 30-43) and 35.3 in the control group (range 28-44) while children of chronic pain sufferers and children of controls had an average age of 8.1 (range 5-14) and 7.2 (4-13), respectively. The age distribution of children as well as other demographic characteristics of chronic pain sufferers and controls are shown in Table 1.

Twenty-five percent of chronic pain sufferers reported head pain, another 45% reported head pain accompanied by pain in at least one other area including neck and shoulders, back, limbs, hands and feet, stomach or other. Another twenty-five percent

Table 1

Demographic Characteristics of Chronic Pain Sufferers and Controls.

	Chronic Pain Group	Control Group
<b>Marital Status</b>		
-Married, never divorced	16(80%)	13(65%)
-Divorced, remarried	1(5%)	3(15%)
-Divorced, single	2(10%)	4(20%)
-Single, never married	1(5%)	0
<b>Duration of marriage</b>		
Mean	12.6 years	12.4 years
Range	9mths-23 yrs.	10mths-21yrs.
<b>Spouse's age</b>		
Mean	37.9 years old	38.1 years old
Range	28-48	25-49
<b>Number of children</b>		
Mean	2.3	2.6
Range	1-5	1-5
<b>Age of children</b>		
4-6	5(25%)	11(55%)
7-9	9(45%)	5(25%)
10-12	5(25%)	3(15%)
13-14	1(5%)	1(5%)

Table continues

	Chronic Pain Group	Control Group
<b>Household SES*</b>		
-I	0	0
-II	2(12.5%)	3(15.8%)
-III	6(37.5%)	10(52.6%)
-IV	7(43.7%)	4(21%)
-V	1(6.2%)	2(10.5%)
<b>Employment Status</b>		
-Full-time	6(30%)	10(50%)
-Part-time	4(20%)	2(10%)
-Disabled	4(20%)	0
-Unemployed	3(15%)	4(20%)
-Student	3(15%)	4(20%)

---

\* A higher SES is indicated by a lower class on the Hollinshead measure.

reported neck and shoulders pain without head pain but accompanied by pain in one or more of the areas already described and 5% reported back pain. On average, participants had been in pain for 11.7 years (range 2-27) and reported a pain intensity of 6.2 (range 1-10) on the visual analog scale ranging from 1 (no pain) to 10 (worst pain imaginable). Participants were also asked about pain frequency, diagnosis of pain disorder, injury, surgery and pain medication. These results are reported in Table 2.

Finally, all participants were asked about a history of diagnosed depression. In the chronic pain group, 40 % reported having been diagnosed with depression in the past whereas only 10% of pain-free participants did. Of those who reported a history of depression, half of the pain group reported being currently depressed whereas nobody in the control group did. Furthermore, 87.5% and 50% of pain sufferers and pain-free participants, respectively, who reported a history of depression had taken anti-depressants in the past whereas half of those in the control group and only 37.5% of pain sufferers were currently taking anti-depressant medication.

### Parental Measures

Alexithymia. The Toronto Alexithymia Scale-20 items (TAS-20; Bagby, Parker, & Taylor, 1994) was used to measure alexithymia in chronic pain patients. The TAS (Taylor, Ryan, & Bagby, 1985) was first revised in order to improve its factor structure. It produced the following four factors: (1) difficulty identifying and distinguishing between feelings and bodily sensations; (2) difficulty describing feelings; (3) reduced daydreaming; and (4) externally-oriented thinking. Although the four factors were

Table 2

Pain Characteristics of the Pain Group and Related Data

Characteristic	Frequencies (%)
<b>Pain Disorder</b>	
-Headaches/Migraines	10(50%)
-Fibromyalgia	4(20%)
-None	6(30%)
<b>Pain Frequency</b>	
-All the time	11(55%)
-Once a day	2(10%)
-Once a week or more	2(10%)
-Less than once a week	4(25%)
<b>Pain caused by injury</b>	11(55%)
<b>Received surgery for pain</b>	6(30%)
-Nbr. of surgeries	2.3 (range 1-5)
<b>Currently taking medication</b>	17(85%)

replicable across samples, the first two factors were highly correlated and the third factor was poorly correlated with the full TAS and negatively correlated with the first factor. The revised TAS (TAS-R; Taylor, Bagby, & Parker, 1992) is a 23-item scale with two factors: Factor 1 is composed of items assessing the ability to distinguish between feelings and the bodily sensations associated with emotional arousal and the ability to describe feelings. Factor 1 corresponds to the first two factors of the TAS. Factor 2 is composed of items assessing externally oriented thinking and corresponds to factor 4 of the TAS.

The TAS-R was revised again in order to yield a three factor structure representing better the data. A new set of items were extracted from the item pool used to create the TAS-R. The forty three items were factor analyzed to see how they loaded on the four original factors of the TAS. The criterion for loading was set higher than in previous scales. Factor 3 (daydreaming) was eliminated due to a lack of items significantly loading on it. Twenty of the forty three items significantly loaded on a three factor solution forming the new TAS-20. Factor 1 represents one's ability to identify feelings and distinguish between feelings and bodily sensations of emotional arousal, Factor 2 represents one's inability to communicate feelings to others, and Factor 3 relates to externally-oriented thinking. This factor structure is replicable across clinical and nonclinical populations and in young adult populations of different cultural background (Bagby, Parker, & Taylor, 1994; Parker, Bagby, Taylor, Endler, & Schmitz, 1993).

The TAS-20 demonstrates good internal consistency. Cronbach's alpha coefficients are 0.81 for the total scale, 0.78 for factor 1, 0.75 for factor 2, and 0.66 for factor 3 (Bagby et al., 1994). Similar coefficients have been reported by Parker, Bagby, et al. (1993). The scale also has good test-retest reliability with a coefficient of 0.77.

Evidence for the concurrent, convergent, and discriminant validity of the TAS-20 is also available (Bagby et al., 1994). Convergent validity was established by strong negative correlations, between scores on the TAS-20 and both measures of openness to feelings ( $r = -.30$ ) and openness to fantasy ( $r = -0.55$ ), two characteristics theoretically incongruent with alexithymia. Authors also argued for the discriminant validity of the TAS-20 based on nonsignificant correlations between scores on the total scale and scores on measures of agreeableness and conscientiousness, two concepts unrelated to alexithymia. Finally, concurrent validity of the scale was established in a behavioral medicine sample with a significant correlation ( $r = 0.53$ ) between TAS-20 total score and score on the Beth Israel Hospital Psychosomatic Questionnaire, another measure of the alexithymia construct.

Respondents complete the TAS-20 by using a 5-point Likert scale to indicate the extent to which they agree or disagree with each statement. The scale ranges from 1 (strongly disagree) to 5 (strongly agree). Higher scores indicate higher levels of alexithymia and cut-off scores are 51 or less for nonalexithymic and 61 or above for alexithymic (Parker, Taylor, & Bagby, 1993). Parker, Bagby, et al. (1993) reported gender differences in scores on the TAS-20, with men scoring significantly higher than women. Authors argued that such a finding is consistent with research showing that women are better at communicating feelings than their male counterparts.

Depression. Parental depression in both groups of parents was measured using the Beck Depression Inventory (BDI, Beck, Rush, Shaw, & Emery, 1979). This version was developed to address several problems with the original BDI version (Beck, Ward,

Mendelson, Mock, & Erbaugh, 1961) and therefore had a reduced number of responses for some items and differently worded responses for other items. The BDI is a self-report scale consisting of 21 clusters of items each representing a depressive symptom, for example, irritability, pessimism, and weight loss. Items are rated from 0 to 3 in terms of intensity and respondents have to choose which item best describes them.

Beck, Steer, and Garbin (1988) reviewed the literature on psychometric properties of the BDI. They reported alpha coefficients ranging from 0.76 through 0.95 with a mean of 0.86 in psychiatric populations, a finding consistent with Beck and Steer (1984) who reported an alpha coefficient of 0.86 for the 1978 version of the BDI in a psychiatric sample. In non-psychiatric samples, Beck et al. (1988) found that alpha coefficients ranged from 0.73 through 0.92 with a mean of 0.81. They also reviewed studies looking at the stability of the BDI over time. They reported Pearson product-moment correlation coefficients ranging from 0.48 to 0.86 in psychiatric populations and from 0.60 to 0.83 in non-psychiatric populations.

The validity of the BDI has been shown in many studies. These were reviewed by Beck et al. (1988) who reported Pearson product-moment correlation coefficients of the BDI with clinical ratings and other measures of depression. They found that correlations with clinical ratings were between 0.55 and 0.96 in psychiatric populations, with a mean of 0.72 whereas they ranged between 0.55 and 0.73 in non-psychiatric samples with a mean of 0.60. Furthermore, correlations with the Zung Depression Inventory (Zung, 1965) ranged between 0.57 and 0.83 with a mean of 0.76 in psychiatric populations and ranged between 0.66 and 0.86 with a mean of 0.71 in non-psychiatric populations.



The BDI was shown to have good discriminant validity and was able to differentiate between psychiatric and non-psychiatric populations (Byerly & Carlson, 1982; Cavanaugh, Clark, & Gibbons, 1983) and some of its items were useful in discriminating psychiatric, medical, and normal samples (Cavanaugh et al., 1983). Furthermore, the BDI demonstrated good construct validity with studies reporting positive relationships between BDI scores and loneliness (Reynolds & Gould, 1981) and between different stressful life events and depression levels as measured on the BDI (Hammen & Mayol, 1982).

A maximum score of 63 may be obtained with suggested cut-off scores varying between different samples and depending on one's purpose for using the BDI (Beck et al., 1988). Turner and Romano (1984) compared scores on the BDI and clinical diagnoses of depression and suggested a cut-off score of 13 with an associated sensitivity of 0.83 and a specificity of 0.82. On the other hand, Bishop, Edgley, Fisher, and Sullivan (1993) suggested a cut-off of 15 for this population and reported a sensitivity of 0.80 and a specificity of 0.70 when using that cut-off. Furthermore, they reported sensitivity and specificity values for all cut-offs between 9 and 21 and reported a sensitivity of 0.84 and specificity of 0.60 when using the cut-off score of 13 suggested by Turner and Romano (1984). Clearly, Turner and Romano may have underestimated the specificity value associated with a cut-off score of 13, a finding which may be attributed to their significantly smaller sample than the one used by Bishop et al. (1993). Other studies (Williams & Richardson, 1993) have used 13 as a cut-off and have argued that the BDI may overestimate the rate of depression in chronic pain populations. They explained this finding by pointing to the number of somatic items in the scale. They suggested that

raising the cut-off score would not be an adequate solution to this problem but rather, that one should compute separately participants' score on the somatic factor they identified and look at its contribution to the total score. The limitation of using somatic items in measuring depression in chronic pain populations (Turner & Romano, 1984) and in medical populations (Cavanaugh et al., 1983) has been stressed in previous studies. However, these same studies, after studying the utility of the BDI in these samples, have argued for the usefulness of this scale in both chronic pain and medically ill populations. Endicott (1984) also turned his attention to this problem and suggested that somatic items related to physical symptoms observed in the population under study be omitted from the diagnostic criteria or scale. Given findings about the usefulness of the BDI when used with a cut-off score of 13 in a chronic pain population (Turner & Romano, 1984), this value was used to screen for depression in this study. However, the contribution of somatic items to the total score were monitored to detect a possible inflation of depression scores due to the confounding effects of these items, as suggested by Williams and Richardson (1993).

Marital satisfaction. The Short Marital Adjustment Test (SMAT; Locke and Wallace, 1959) was used to measure marital satisfaction in this study. It is one of the most frequently used scale of marital adjustment (Harrison & Westhuis, 1989). Locke and Wallace defined marital adjustment as "the accommodation of a husband and a wife to each other at a given time". The scale contains 15 items and has no subscales. Scores may range between 2 and 158 on the scale and a cut-off score of 100 was suggested by

Locke and Wallace (1959) to differentiate between adjusted and maladjusted marriages with a sensitivity of 0.96 and a specificity of 0.83.

The SMAT has a split-half reliability of 0.9 (Locke & Wallace, 1959) and good internal consistency as measured by an alpha coefficient of 0.83 (Burnett, 1987). Cross and Sharpley reported between item-correlations ranging between 0.04 and 0.61 with a mean of .38. Finally, a product-moment correlation of 0.88 has been found between different administrations of the SMAT, therefore establishing its test-retest reliability (Hudson & Glisson, 1976).

Discriminant validity for the SMAT was established, with significant differences in SMAT scores between clinical couples and non-clinical ones (Haynes, Follingstad, & Sullivan, 1979; Hudson & Glisson, 1976). A concurrent validity of 0.89 with the Stuart Marital Precounseling Inventory (Stuart, 1973) has been reported (Haynes et al., 1979) while Hudson and Glisson (1976) reported a concurrent validity of -0.74 with their Index of Marital Satisfaction. Bagarozzi (1985) reported a concurrent validity of 0.88 among divorced couples and of 0.86 among married couples with the Dyadic Adjustment Scale (Spanier, 1976).

The SMAT was criticized by Cross and Sharpley (1981) for having items which do not contribute to its validity with item 1 and item 14 together having almost the same discriminant validity as all 15 items together. However, there are no disadvantages to using all items, except for time. They also reported two factors in the SMAT, one measuring marital adjustment and accounting for 89% of the variance and a second factor they interpreted as reflecting social desirability. However, Hawkins (1966) had previously shown that social desirability only introduced a negligible amount of error in the

measurement of marital satisfaction using the SMAT. Advantages of this scale are that it is short, easy to administer and requires an 8th to 9th grade reading ability (Dentch, O'Farrell, & Cutter, 1980).

Socioeconomic status (SES). The Two Factor Index of Social Position developed by Hollingshead (1965, as cited in Myers & Bean, 1968) was used to measure SES. The scale is divided into two separate scales, one for occupation and one for educational level. The occupation scale ranges from 1 (executives and proprietors) to 7 (unskilled workers). The educational scale also ranges from 1 (graduate professional training) to 7 (less than seven years of schooling). The Social Position score is calculated by multiplying the occupational level by 7 and the educational level by 4 and adding them up. Scores may range from 11 to 77 with a high score indicating lower social position. One's social class may also be determined using the following criteria for each of five social classes: (I) 11-17; (II) 18-27; (III) 28-43; (IV) 44-60; and (V) 61-77.

### Child Measures

Social competence. The Teacher-Report version of the Matson Evaluation of Social Skills with Youngsters (MESSY; Matson, Rotatori, & Helsel, 1983) was used to assess children's social competence. This scale is appropriate for children aged 4 to 18 years. It consists of 64 items describing a wide range of social behaviors. Teachers rate each item on a 5-point Likert scale ranging from 1 (not at all) to 5 (very much) according to the frequency with which the child performs the behavior described or feels like the statement described. Subscales are Appropriate Social Skills, Inappropriate

Assertiveness/Impulsive and Miscellaneous Items. These subscales were obtained through factor analysis and item loadings of 0.3 was required for items to be retained on a factor. Separate scores may be obtained for each factor or a total score may be computed. A higher score indicates fewer social skills.

The scale shows good internal consistency and test-retest reliability. Pearson correlation coefficients of at least 0.55 for a 2-week interval test-retest reliability was the inclusion criterion for all items (Matson et al., 1983). Split-half reliability coefficients of 0.87 and interitem correlations of 0.93 (Matson, 1990) were found in populations of visually-impaired and hearing-impaired children.

Concurrent and predictive validity of the MESSY were established with the Children Depression Inventory (Wierzbicki & McCabe, 1988) and both factors of the MESSY, appropriate social skills and inappropriate social skills, were shown to correlate negatively and positively with childhood depression as measured by total score on the CDI, respectively. Both factors correlated differentially with different factors on the CDI as well (Helsel & Matson, 1984). The MESSY was also shown to correlate well with other measures of social skills in a non-clinical population, such as structured interviews, popularity rankings, and the School Behavior Checklist (Matson, 1990). Concurrent validity of the MESSY with other measures of social skills, such as nomination measures of social behavior, was also established in clinical populations of children (Kazdin, Matson, & Esveldt-Dawson, 1984). Finally, discriminant validity of both scales of the MESSY was established in a study comparing clinical populations of children and normal controls on their level of social skills. Both groups of clinic children were shown to have

fewer social skills and more inappropriate assertive/impulsive social skills than controls (Strauss, Lease, Kazdin, Dulcan, & Last, 1989).

Matson (1990) provided norms for the MESSY which were established on a sample of 322 normal children. Norms were calculated by estimating linear age and gender effects. The author reports gender effects on the MESSY, with girls showing lower scores (i.e.: more social skills) than boys, as well as age effects, with younger children showing higher scores (i.e.: less social skills) than older children. Wierzbicki and McCabe (1988), however, did not find gender effects.

### Procedures

Participants were first selected over the phone on the basis of a screening questionnaire (see Appendix A/B) assessing them in terms of the inclusion criteria mentioned before. Those who met selection criteria were given an appointment for themselves and their child or children either at the University of Windsor or at their own home. Those who traveled to the university for testing were compensated with \$2 for gas expenses. During testing, each child was first informed about the study, what it involved for him or her, and was asked to sign an assent form if he or she agreed to participate (see Appendix C/D). Each child had the opportunity to refuse to participate in this study. Then the parent was asked to read and sign a consent form (Appendix E) and to fill out a Release of Information Consent Form (see Appendix F) allowing the teacher to complete the MESSY and return it to the researcher. Finally, the parent completed a battery of questionnaires including a demographic data questionnaire (see Appendix G/H), the TAS-20, the BDI and the SMAT. Spouses of chronic pain sufferers and of their matched

controls were not asked to complete the SMAT for practical purposes and based on previous studies showing intercorrelations between spouses' reports on this scale. Lichtman, Taylor, and Woods (1987) reported a significant correlation ( $r=.54$ ,  $p<0.001$ ) between spouses' scores on the SMAT as well as Ahern, Adams, and Follick (1985) who reported a correlation of  $r=0.57$  ( $p<0.001$ ) between scores of chronic pain patients and their spouses.

With all the consent forms completed, the Teacher's Rating Form of the MESSY was sent to the teacher identified by parents and children as having the most contact with the child. The teacher was told only that the child was participating in a study on the social competence of children between the ages of 4 and 14 to avoid future prejudice toward the child by the teacher, that is, to avoid the child being seen as different from others by the teacher because of parents' health status. The teacher received a package containing an instruction sheet (see Appendix I), the form allowing the release of information, the Teacher's Rating Form of the MESSY, and a return envelope. Those teachers who failed to return questionnaires within three weeks were contacted.

All information was kept strictly confidential. Code numbers were assigned to parent-child dyads and only these numbers appeared on the questionnaires. The name and code number appeared together only on the parent consent form, child assent form, and release of information form. These were kept separate from the completed questionnaires. To respect the child's rights to confidentiality and to minimize risks associated with getting feedback on the questionnaires completed, both parent and child agreed not to look at their scores and parents agreed not to have access to their child's score on the MESSY. However, since completing questionnaires may increase one's awareness about

personal issues and cause a need to consult, a list of agencies was included with the parent consent form. All participants were entered into a draw to win a \$50 gift certificate at Big V stores.



## CHAPTER IV

### RESULTS

#### Data Screening and Preliminary Analyses

Examination of the data prior to analyses revealed that BDI scores, TAS scores, and child age were not normally distributed in the sample. Data transformations were performed, with BDI scores undergoing a logarithmic transformation and TAS scores and child age, an inverse transformation.

Examination of the chronic pain sample ( $n=20$ ), revealed that the variable “exposure to pain” was not normally distributed so a logarithmic transformation was applied to this variable for subsequent analyses.

In the sample of chronic pain mothers and their children ( $n=18$ ), T scores on the total MESSY and raw scores on the inappropriate/impulsive subscale of the MESSY lacked a normal distribution and were therefore transformed with a logarithmic function. Within that sample, T scores on the Inappropriate/impulsive subscale of the MESSY lacked a normal distribution in the female children group. This variable was therefore transformed into its inverse. In the male children group, values representing children’s length of exposure to their parents’ pain and child age were not normally distributed. These variables therefore underwent an inverse transformation for further analyses.

To address the issue raised by Williams and Richardson (1993) concerning the possible inflation of BDI scores in chronic pain samples due to overendorsement of somatic items of work inhibition, sleep disturbance, fatigability, loss of appetite, and loss of weight, the items most frequently endorsed by chronic pain sufferers were identified.

The most frequently endorsed item, fatigability, was reported by 100% of the sample, irritability was the second most frequent complaint with 90% of the sample endorsing it, while sleep disturbance was found in 80% of them and work inhibition in 75% of them along with somatic preoccupation.

### Demographic Differences Between Groups

First, given the potential influence of SES on children's social competence (Patterson et al., 1991) and on the family living with a chronic condition (Woods & Lewis, 1995), differences in household SES between the pain and control groups were assessed using a Pearson chi-square test. No significant difference emerged between the groups on that measure ( $X^2(3, N=35) = 2.11, p > 0.05$ ). Also, given evidence for the effect of marital status, specifically of divorce and single parenting (Patterson et al., 1991) on children's social competence, differences between groups on these variables were also assessed using a Pearson chi-square test. Again, no significant differences were found between the groups' marital status, with  $X^2(3, N=40) = 2.97, p > 0.05$ .

Finally, to confirm the appropriate matching of groups on parent's age and child's age, groups were compared on both variables using t-tests for independent groups. No significant differences were found on either parent's age ( $t(34) = -.37, p > 0.05$ ) or child's age ( $t(38) = -1.12, p > 0.05$ ).

### Hypothesis 1

It was expected that children of chronic pain sufferers would be rated by teachers as having less appropriate social skills and more inappropriate social skills than children of

pain-free controls. Mean T scores for the pain group and control group, respectively, were 45.2 and 46.4 on the total MESSY, 45.6 and 47.6 on the inappropriate/impulsive social skills subscale, and 52.6 and 55 on the appropriate social skills subscale. Group differences on these measures were assessed using t-tests for independent samples. No significant differences were found between groups on any of these child measures.

### Hypothesis 2

It was predicted that chronic pain sufferers would be more depressed, less satisfied with their marital relationship, and more alexithymic than controls. Frequencies revealed that 45% of chronic pain sufferers scored in the depressed range on the BDI whereas none of the controls did, 58.8% of them reported a lack of marital satisfaction on the SMAT as opposed to 37.5% of controls, and 35% of pain sufferers scored in the alexithymic range of the TAS whereas 5% of the controls did. To assess whether there were significant group differences on levels of depression, alexithymia, and marital satisfaction a one-way MANOVA was performed. Results showed a significant difference between groups on these variables using Hotellings'  $T^2$  as criterion for significance with  $F(4,28)=8.11$ ,  $p<0.01$ . Univariate comparisons revealed significant differences between groups in depression levels ( $F(1,29)=31.6$ ,  $p<0.001$ ) and a marginal difference in alexithymia ( $F(1,29)=3.9$ ,  $p<0.1$ ). Mean scores and standard deviations for each group and results of univariate F-tests are shown in Table 3.

Table 3.

Means, Standard Deviations, and Group Differences in BDI, TAS, and SMAT

	Pain Group	Control Group	Univariate F
<b>BDI</b>			34.4**
<u>M</u>	14.2	3.5	
<u>SD</u>	9.3	2.7	
<b>Total TAS</b>			3.42*
<u>M</u>	47.0	37.5	
<u>SD</u>	17.1	11	
<b>SMAT</b>			2.8
<u>M</u>	90.2	109.2	
<u>SD</u>	36.3	28.4	

\*  $p < 0.1$ , \*\*  $p < 0.001$ .

### Hypothesis 3

Parental depression, marital satisfaction, alexithymia, and pain status were expected to predict children's social competence. A hierarchical multiple regression was performed to assess the contribution of these characteristics to the child's overall social competence taking into account relevant covariates identified through correlation matrices.

Child age was treated as a covariate because of its correlation with total MESSY score ( $r(40) = 0.38, p < 0.05$ ) and was entered first into the regression equation. Results revealed a significant regression coefficient ( $F(1, 29) = 6.42, p < 0.05$ ) for child age with higher age being associated with more social skills. Unstandardized regression coefficients ( $B$ ) and squared partial correlations ( $sr^2$ ) for child age and other predictors added to the regression equation as well as multiple correlation coefficient ( $R$ ) and  $R^2$  are shown in Table 4.

Standard multiple regressions were then performed to predict children's inappropriate/impulsive social skills and appropriate social skills. No predictors for appropriate social skills or inappropriate social skills were found.

Examination of simple correlations between variables revealed significant correlations between BDI and SMAT ( $r(29) = -0.38, p < 0.05$ ), with depression being positively associated with marital difficulties. Correlations between BDI and TAS ( $r(29) = -0.6, p < 0.001$ ) and between BDI and Pain status ( $r(29) = 0.72, p < 0.001$ ) also revealed that depression was positively associated with both alexithymia and pain status. Furthermore, a significant correlation was found between TAS and pain status ( $r(29) = 0.35, p < 0.05$ ) indicating that alexithymia is positively associated with pain status.

Table 4

Results of the Hierarchical Regression for Total MESSY Scores in the General Sample.

Predictors	$sr^2$	B	Multiple R	$R^2$
Child age	.18	58***		
*TAS	.22	-419.6***		
			.63**	.4

\*  $p < 0.1$ ; \*\*  $p < 0.05$ ; \*\*\*  $p < 0.01$

\*Parental alexithymia predicted fewer social skills

#### Hypothesis 4

The social skills of children of chronic pain sufferers were expected to be predicted by parental depression, marital satisfaction, alexithymia, pain intensity, and pain duration. It was also expected that length of children's exposure to parental pain would be an important predictor of their social competence. A hierarchical multiple regression was performed to assess the specific importance of various characteristics of chronic pain sufferers in predicting child overall social competence. Parental variables used as predictors included level of depression, alexithymia, and marital satisfaction as well as pain intensity and duration.

Length of time for which children were exposed to their parent's pain ("exposure to pain") was also assessed as a predictor of their social competence. Child age was again treated as a covariate and entered first into the regression equation due to its significant correlation with Total MESSY ( $r(20) = 0.49, p < 0.05$ ). Results revealed non significant regression coefficients for child age alone. Multiple  $R$  and  $R^2$  obtained after other predictors were entered into the regression equation as well as unstandardized regression coefficients ( $B$ ) and squared partial correlations ( $sr^2$ ) of significant predictors are shown in Table 5.

Two standard multiple regressions were then performed using the same predictor variables for both inappropriate/impulsive social skills and appropriate social skills. Results for appropriate social skills are shown in Table 5. Inappropriate social skills, however, failed to be significantly predicted by those parental characteristics included in these analyses.

Table 5.

Results of Regression Analyses for the Social Competence of Chronic Pain Sufferers'Children.

	Multiple R	R square	sr <sup>2</sup>	B
<b><sup>a</sup>Total social competence</b>	.83*	.69		
Pain Intensity			.23	1.6**
Exposure to pain			.23	-17.9**
BDI			.12	-.43*
TAS			.16	.27*
<b><sup>b</sup>Appropriate social comp.</b>	.82**	.67		
BDI			.27	1.5**
TAS			.28	-.82**
Exposure to pain			.38	46.9***

\*  $p < 0.1$ ; \*\*  $p < 0.05$ ; \*\*\*  $p < 0.01$ .

<sup>a</sup>Fewer social skills as indicated on the total MESSY were predicted by lower parental depression, less exposure to a parent's pain, higher parental pain intensity, and higher alexithymia.

<sup>b</sup>Fewer appropriate social skills were predicted by higher parental depression and alexithymia, and less exposure to a parent's pain.



Significant correlations were found between exposure to pain and both total social competence ( $r(15) = -.5, p < 0.05$ ) and appropriate social skills ( $r(15) = .61, p < 0.01$ ) as expected from the multiple regressions' results. The only correlation with inappropriate social skills was a marginally significant one with pain intensity ( $r(15) = .4, p < 0.1$ ) which indicated a positive relationship between the two variables. Other significant correlations were found between the BDI and TAS ( $r(15) = 0.81, p < 0.01$ ) and between BDI and pain duration ( $r(15) = -0.46, p < 0.05$ ) indicating that parental depression is positively associated with alexithymia and decreases as pain duration increases. Finally, pain duration and exposure to pain were positively correlated with each other ( $r(15) = 0.55, p < 0.05$ ).

#### Post-hoc Analyses on the Relationship between Parental Pain Duration and Children's Social Competence

In an attempt to find explanations for the lack of significant difference between the chronic pain and control group on measures of child social competence, data were further examined. Specifically, it was observed that 19 out of the 20 chronic pain sufferers had a pain duration of longer than 3 years. Furthermore, post-hoc analyses were conducted to look for differences in child social competence between groups of different pain duration. The chronic pain sample was therefore divided along its median split for pain duration which corresponded to a pain duration of 9 years.

Mean scores for the group with shorter pain duration and the group with longer pain duration were 46.7 and 43.3, respectively, on the total MESSY, 45.9 and 45.1 on the inappropriate/impulsive subscale, and 47.9 and 58.4 on the appropriate social skills subscale. Differences between the two newly created groups in total MESSY score and

each of the two subscales were assessed using t-tests for independent samples. Only a marginal significant difference emerged between these groups in levels of appropriate social skills ( $t(18) = -1.99, p < 0.1$ ).

In order to assess whether the differences observed in children's appropriate social skills may be due to differences in parents' functioning between the two groups, a MANOVA was conducted with BDI, TAS, and SMAT. No significant differences were found between groups on these variables.

#### Hypothesis 5

Male children were expected to have less social skills than female children. Gender differences in children's scores on the total MESSY, appropriate social skills scale, and inappropriate/impulsive social skills scale were tested using t-tests for independent samples. No significant differences were found on these measures.

#### Hypothesis 6

Predictors of social competence were expected to be different between boys and girls. Despite the small sample sizes ( $n=9$  in boys,  $n=7$  in girls), multiple regressions were conducted for each social skill subscale and for the total scale using parental alexithymia, depression, marital satisfaction, pain intensity, and exposure to pain as predictors of boys' and girls' social competence, respectively. In the male group, marital status was treated as a covariate of inappropriate/impulsive social skills ( $r(7) = 0.66, p < 0.5$ ) and child age as a covariate of total MESSY scores ( $r(7) = 0.75, p < 0.05$ ).

Due to the small sample size, a near perfect solution was obtained for the regression of females' total scores on the MESSY but no significant predictors of social competence were identified in either group. The BDI, however, contributed marginally to the variance in the total MESSY scores of boys ( $sr^2 = 0.5$ ) and indicated that parental depression predicted more social skills in boys. Significant correlations between social skills measures and relevant variables in each gender group are shown in Table 6.

#### Post-hoc Analyses on Raw MESSY Scores

To assess whether the lack of gender differences in social skills may have been due to the use of T scores on the MESSY, t-tests for independent samples were computed using raw scores on each subscale of the MESSY. Mean raw scores for boys and girls respectively were 68.9 and 73.8 on the appropriate social skills subscale, 67.5 and 66.5 on the inappropriate/impulsive social skills subscale, 126.3 and 118.1 on the total scale. No significant gender differences were found.

Table 6

Correlations between Variables for Boys and Girls in the Chronic Pain Sample.

Gender	Variables	MESSY Appropriate	MESSY Inappropriate	MESSY Total	Exposure to pain	BDI total
<b><sup>a</sup>Males</b>						
	BDI	0.63**		-0.75**	-0.6*	
	TAS			-0.53*	-0.76**	0.72**
	Exposure to pain	-0.53*		0.62*		
<b><sup>b</sup>Females</b>						
	TAS	-0.64*			-0.76**	0.97***
	Pain intensity		-0.79**			
	Exposure to pain	0.82**		-0.65*		-0.71**

\*  $p < 0.1$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.001$

<sup>a</sup>More social skills in males were predicted by higher parental depression and alexithymia, and longer exposure to parental pain.

<sup>b</sup>More social skills in girls were predicted by lower parental alexithymia and pain intensity, and longer exposure to parental pain.

## CHAPTER V

### DISCUSSION

#### Social Competence in Children of Chronic Pain Sufferers

The hypothesis that children of chronic pain sufferers would exhibit fewer social skills than children of pain-free parents was not supported in this study. The current results are surprising given previous studies which reported behavioral problems in these children (Chun et al., 1993; Rickard, 1988). Also, the use of teacher ratings of social competence in this study was expected to yield significant results given that Chun et al. (1993) reported teacher-rated social competence deficits although they failed to find behavioral problems when relying on parents' reports.

The current lack of support for the first hypothesis may have been due to the use of the MESSY as a measure of children's social skills. Closer examination of this scale reveals several potential problems. First, factor loadings of 0.3 were used for factor extraction. This criterion is the minimum value required for factor extraction and a higher value is usually suggested (Tabachnik & Fidell, 1989, p. 640). Furthermore, norms were established on a sample of 322 children which is typically small for normative populations. Finally, the MESSY has not been used and validated as extensively as have other standardized scales such as the Child Behavior Checklist.

Current findings may also be due to characteristics of the chronic pain sample. First, this sample included only self-selected chronic pain families. As such, it may represent better adjusted families who are more willing to talk about the chronic pain experience. Participants may therefore not be representative of all chronic pain sufferers. The current sample, being non-clinical, could also be assumed to be less severely affected

by their pain and better functioning since not currently seeking treatment. In fact, previous studies have described community pain samples as less impaired in their general functioning and less disabled than clinical samples (Crook & Tunks, 1985; Dura & Beck, 1988). Most studies which reported social competence deficits in children had used clinical samples (Chun et al., 1993; Rickard, 1988) and in those studies which used non-clinical samples (Dura & Beck, 1988) there were no significant differences between these children and control children.

Another potential influence on the current findings is the gender composition of the current sample, which is essentially female. Previous reports of social competence deficits in children of chronic pain sufferers used male patients only (Rickard, 1988) or reported less parent-rated social competence in children of male patients than in those of female patients (Chun et al., 1993). However, in the Chun et al. (1993) study, teacher-rated social competence did not differ based on parent gender. Furthermore, female spouses of sick males reported their husband's illness as having more of a negative impact on their role as a father and husband than female illness did on their role as mothers (Hafstrom & Schram, 1984). Male spouses have also been shown to be less distressed by their wives' illness than female spouses who face their husband's illness (Kerns & Curley, 1985; Lieberman & Fisher, 1995; Rowat & Knafl, 1985). These results suggest that the current sample, comprised mostly of female sufferers and their male spouses, may be less impaired in their family functioning due to better coping by the spouse and less impact of maternal illness on parenting. We may therefore expect the children in the current sample which comprises mostly female chronic pain sufferers to be better adjusted than children

previously studied in mixed samples (Chun et al., 1993) or in samples of male chronic pain patients (Rickard, 1988).

The age range of children assessed in the current study may also explain the lack of significant findings concerning their social adjustment. Previous researchers have suggested that adolescent children are most at risk for maladjustment when faced with parental chronic illness (Rankin & Weekes, 1989). Also, previous studies which have looked at children of chronic pain sufferers and found indicators of maladjustment assessed samples of children which contained more adolescents than in the current study. In fact, Chun et al. (1993) used a sample of children with an age range of 6 to 16 years old and Mikail and Von Baeyer (1990) looked at children between the ages of 9 and 17 years old. Furthermore, Dura and Beck (1988), who failed to find significant social skills deficits in their sample, used a younger sample composed of 7- to 13-year olds. The only exception to these studies is Rickard (1988), who found behavior problems in his sample of 8- to 12-year olds. Although child age was not a significant predictor of children's social skills in the current pain sample, having restricted the sample of children to those younger than 14 years old may have led to the inclusion of less severely affected children.

Another important characteristic of the current sample is the duration of participants' pain. Whereas previous studies on children of chronic pain patients had participants with an average pain duration of about 5 years (Chun et al., 1993) or had restricted their sample to pain sufferers whose pain duration was between 6 months and 3 years (Rickard, 1988), the current sample had a longer average pain duration of 11.7 years. Furthermore, according to Hendler (1984), pain evolves from an acute stage to a subchronic stage which he describes as pain that has lasted for over 3 years and to which

people start adjusting. The current sample may therefore represent a well adjusted group of pain sufferers who have learned to cope with their pain and function effectively over the years. In this case, we might expect children to be better adjusted too compared with children assessed in previous studies using more disabled pain sufferers.

To test this hypothesis, chronic pain sufferers were divided into two groups of different pain duration. Since most sufferers had been in pain for well over 3 years, Hendler's (1984) cut-off of 3 years could not be used and the median split of 9 years was used instead. Groups were then compared in terms of children's social skills. No significant differences emerged although mean scores for each group were in the predicted direction with children of chronic pain sufferers who had been in pain for less than 9 years showing more inappropriate social skills than those whose parents had been in pain longer. Also, these children were found to have marginally less appropriate social skills than children from families who had known pain for more than 9 years. These results suggest a need to further investigate the relationship, already postulated by Hendler (1984), between a parent's pain duration and family functioning as well as how these relate to child functioning. The current results, although not significant, suggest that the current sample may have been better adjusted due to longer chronicity which may explain the lack of significant findings concerning children's social competence.

An interesting finding, however, is that parental depression, alexithymia, and marital satisfaction were similar across groups of different pain duration. Possible mechanisms by which children become better functioning after several years of parental pain despite no changes in these parental variables may be that parents, despite being depressed and alexithymic, may be less disabled in some other way not measured in this



study. Disability level, defined as the amount of functional impairment in several areas of life, has been identified as an important predictor of family functioning (Dura and Beck, 1988) and as a better predictor of child functioning than either parental depression or marital conflict (Chun et al., 1993). Pain disability has also been shown to decrease as the pain persists (Strong, Ashton, & Stewart, 1994). The current sample, comprised of pain sufferers of long pain duration, may be less disabled and therefore have more socially competent children than in previous samples with less chronicity. The role of disability level in the relationship between pain duration and child functioning needs to be further assessed in future studies.

Children of chronic pain sufferers who are still depressed and alexithymic may also become better adjusted after several years of parental pain because their parents learn ways to compensate for their own psychological distress so that their parental role is less compromised. In fact, parenting quality (Lieberman & Fisher, 1995) and the parent-child relationship (Conrad & Hammen, 1993) have been described as key variables linking parental illness to child functioning. Thomas and Roy (1989) reported higher family stability in chronic pain patients with longer chronicity than in a group of patients with less chronicity, suggesting that those patients who have suffered for a longer period of time may face less disruption in their parenting roles.

Another possible mechanism behind children's higher social skills after more years of being exposed to a parent's pain is that they may have developed better coping strategies themselves in response to parental pain, depression, marital dissatisfaction, and alexithymia. Ways of coping used by both parents and children need to be investigated, especially in relation to chronicity. Gaining insight into what changes occur as the pain

persists and how these serve to promote better adjustment in family members may have important clinical applications. This knowledge could be used by professionals working with families seeking treatment in order to help them function better at an earlier stage of their pain history.

### Depression, Alexithymia, and Marital Satisfaction in Chronic Pain Sufferers.

As expected, in the current study, chronic pain sufferers were more depressed, had more alexithymic traits, and reported less marital satisfaction than pain-free controls. These results are consistent with previous reports on the higher rates of depression, alexithymia, and marital maladjustment in chronic pain samples (Cox et al., 1994; Kerns & Turk, 1984; Flor et al., 1987). On average, chronic pain sufferers in the present sample scored in the depressed range on the BDI and in the maladjusted range on the SMAT. However, both chronic pain sufferers and controls scored in the normal range on the TAS indicating that both groups were mostly non-alexithymic. Although frequencies revealed clinical differences between chronic pain sufferers and controls, statistically significant differences emerged only for depression and alexithymia with the former group scoring higher on these measures. The lack of significant difference in marital satisfaction is consistent with the notion of “caretaker marriages” (Feinauer & Steele, 1992) in which both patient and spouse adjust to their roles as patient and caregiver and therefore do not report dissatisfaction in their relationship. Also, Ahern et al. (1985) found marital satisfaction in chronic pain patients and their spouses, as measured by the SMAT, to be predicted by patients’ functional impairment and psychosocial disability. As was seen before, given the chronicity of the current sample, levels of disability may be lower and

therefore marital satisfaction may be preserved. The lack of significant difference in marital adjustment is consistent with Chun et al. (1993) who reported depression but failed to find significant marital maladjustment in their sample. Still, rates of maladjusted marriages in this study were even higher than in a previous study which reported 27% of their sample as dissatisfied with their marriage using the SMAT (Ahern et al., 1985).

Despite the lack of statistical difference in marital satisfaction between the chronic pain group and control group, it is important to consider the clinical significance of the current findings. Clinical significance is evaluated by looking at “the extent to which individuals perform at or within the normative range” and it refers to “the practical value or importance of the effect” (Kazdin, 1992, p. 349-350). Given that a majority of chronic pain sufferers scored above the norm on the SMAT and that, on average, they tend to be in the maladjusted range, the current findings are clinically significant. Furthermore, clinicians working with and evaluating chronic pain sufferers can use their knowledge of the high prevalence of depression, alexithymia, and marital maladjustment to design appropriate interview methods and screening strategies for the patients they treat.

Results also support Williams and Richardson’s (1993) concern about the possible inflation of depression rates in chronic pain samples when using the BDI due to overendorsement of somatic items. Although rates of depression reported in the current pain sample are similar to those found in previous findings (Kerns & Turk, 1984) the possible inflation of scores on the BDI needs to be taken into account when interpreting current findings.

### Predictors of Children's Social Competence.

Across groups. Child age was found to be a significant predictor of child social competence, a finding consistent with previous studies which suggested that younger children have fewer social skills than older ones (Matson, 1990). As expected, parental alexithymia was another variable which added to the prediction of social competence above and beyond child age. These two variables accounted for 40% of the variance in social competence. These results are consistent with reports on the importance of family expressiveness in the development of social skills (Parker et al., 1992) and underscore the importance of teaching families with chronic pain to communicate emotions effectively.

Contrary to expectations, pain status was not a significant predictor of social competence. This indicates that chronic pain alone may not have consequences on child functioning but rather that specific characteristics of the pain sufferer (i.e., pain intensity, depression) may be more important for children's social development. Also, the lack of significant findings for the predictive value of depression or marital adjustment may indicate that these characteristics are not always negative for children but may add to the consequences of other risk factors, such as chronic pain. The result may also be due to the heterogeneity of the sample comprising pain sufferers and controls which may confound potential effects.

In the pain sample. Child age was correlated with, but was not a significant predictor of, children's social competence. As expected, the most important predictor of children's social skills was the length of time they were exposed to a parent's pain and parental pain intensity, each of which accounted for 23% of the variance. Specifically,

social competence increased as children were exposed longer to a parent's pain, a finding consistent with results mentioned before on the relationship between pain duration and child functioning. These results were not due to a concurrent increase in children's age since the influence of child age was controlled for in these analyses. Also, children's social skills were negatively associated with pain intensity. This finding is consistent with previous reports on the relationship between disability level and family functioning (Dura & Beck, 1988) and children's social competence (Chun et al., 1993). In fact, we may expect pain intensity to be associated with more disability which would adversely affect child functioning.

The hypothesis that parental variables of depression, alexithymia, and marital satisfaction would be significant predictors of children's social competence was only partially supported. Alexithymia was found to be the next most important predictor of children's social skills, followed by depression, with alexithymia being associated with lower social skills in children. However, the specific relationship between parental depression and children's social skills was mixed, with depression being associated with better social competence on the total score of the MESSY but predicting less appropriate social skills on that subscale. Since depression was only a weak predictor of total scores on the MESSY, more weight needs to be given to the negative relationship between parental depression and appropriate social skills, a finding which is supported by previous studies (Hammen, Adrian, et al., 1987). These findings on the value of parental depression in predicting children's social skills add to previous studies which failed to find such as relationship (Chun et al., 1993).

Contrary to predictions, marital satisfaction was not identified as a significant predictor of children's social skills. Although these results replicate Chun et al.'s (1993) findings, they are unexpected given the vast literature supporting the relationship between these variables. Potential explanations for this finding may be found by further investigating the specific mechanisms by which marital satisfaction may impact on children. It has been shown that marital dissatisfaction may affect children by leading to overt conflict to which children are directly exposed (Bryant & De Morris, 1992 ) and by disrupting parent-children relationships (Emery & O'Leary, 1984). Given previous reports on the stronger association between overt conflict and child adjustment than between marital satisfaction and this variable (Porter & O'Leary, 1980), the current findings may have been different had overt conflict been measured instead of marital satisfaction. Also, given the lack of adequate emotional expression in chronic pain families there may not be many instances of overt conflict in maritally dissatisfied couples. In this situation, children would not be as affected by marital dissatisfaction. Furthermore, as was argued earlier, despite parents being depressed, alexithymic, and dissatisfied in their relationship, the current sample was comprised of chronic pain sufferers of many years who may have learned to adjust in such a way so as not to disrupt their parenting role. These findings underscore again the need to investigate how families with chronic pain learn to cope with their pain and other psychological and social difficulties, how their use of coping strategies change over time and how these serve to protect children from maladjustment.

Surprisingly, no predictors of inappropriate/impulsive social skills were found. This may have been due to a lack of variability in scores obtained on this scale. In fact,

standard deviations for these scores were smaller on this subscale than on either the appropriate social skills subscale or the total scale. These results suggest that the MESSY may lack sensitivity in identifying behaviors which reflect inappropriate social skills which puts into question the adequacy of this scale for use in the current study. The current lack of variability in scores may also be attributed to a reluctance on the part of teachers to endorse items on the inappropriate/impulsive subscale or to teachers failing to take the appropriate time or care in filling out the scale altogether.

#### Gender Differences in Mother-Child Pairs.

Children's social competence. The hypothesis that boys would show fewer social skills than girls was not supported in this study. These results are inconsistent with previous findings which found male children of chronic pain sufferers to be less socially competent than female children (Chun et al., 1993). This may have been due, however, to the small sample size ( $n=18$ ). Also, gender effects were found on most studies using the MESSY with girls showing less inappropriate/impulsive social skills than boys. These gender effects were taken into account when constructing norms for the MESSY and in calculating T-scores which may explain the current results. Post-hoc analyses using raw scores on the MESSY failed to yield significant gender differences. However, means on all subscales of the MESSY were in the predicted direction with boys showing less appropriate social skills and more inappropriate/impulsive social skills than girls.

Correlates of children's social competence. Parental depression was found to be a marginal predictor of males' total social skills. However, no other results from the

regression analyses performed in each gender group are interpretable due to the small sample sizes. Whereas parental depression was the best correlate of boys' social skills, pain intensity and length of exposure to a parent's pain were best associated with girls' social skills. As pain intensity increased, girls' inappropriate social skills decreased and as length of exposure to pain increased, their social skills increased. These results suggest that girls' social adjustment may be more affected by a parent's pain and disability level than that of boys.

Contrary to expectations, boys' social skills increased as parental depression increased, a finding inconsistent with many reports of the negative impact of parental depression on children (Zahn-Waxler et al., 1990). These results suggest that boys of depressed mothers with chronic pain may cope with this condition in a way that increases their social competence as perceived by the teacher. For example, it may be that they become more withdrawn and quiet or that they take on a caregiving role with the sick mother which generalizes to classmates at school, behaviors which would be rated as more socially appropriate by the teacher. Another explanation for these findings comes from Goodman et al. (1993) who argued for the mediating role of marital maladjustment in the relationship between depression and child functioning. Given the lack of significant marital maladjustment in this sample, it may be that depression did not have as much impact on children as it would have otherwise. Furthermore, this effect could be specific to boys given the particular vulnerability of male children to parental discord (Emery & O'Leary, 1982). These results underscore the importance of taking gender differences into account when studying child adjustment and suggest a need to further look for gender



differences in the way children of chronic pain sufferers cope with and respond to their parents' condition.

As expected, alexithymia was found to be the next most important correlate of girls' appropriate social skills whereas it was not as important in boys. Interestingly, whereas alexithymia was associated with less social competence in girls, it contributed positively to the social competence of boys. Girls who live with alexithymic parents may not learn to express their emotions which may have a negative impact on their social skills development. In contrast, it seems that having a parent with alexithymic traits who is unable to provide adequate modeling of emotion expression contributes positively to boys' social skills. These results are consistent with previous studies which found that emotional expression may be an important determinant of girls' social skills (Custrini & Feldman, 1989) whereas it may not contribute positively to boys' social competence. These results suggest that parental characteristics such as alexithymia and depression may have differential effects on children based on gender. The current results suggest that future studies looking at predictors of children's adjustment need to take into account gender of the child since boys and girls may be affected differently by a given family characteristic and results are therefore not generalizable across gender groups.

## CHAPTER VI

### CONCLUSION

The current study was able to show the importance of parental depression, alexithymia, pain intensity, and length of exposure to a parent's pain in predicting the social competence of chronic pain sufferers' children. Although these children were not found to be less socially competent than children of pain-free controls, results concerning the role of pain duration in the impact of chronic pain on families are interesting. In fact, pain chronicity and duration of children's exposure to their parents' pain was found to be associated with their social competence levels. Furthermore, potential links between chronic pain and child functioning, such as disability levels and parenting quality, were outlined and were suggested as worthwhile topics for further investigation.

Another contribution of the current study was the identification of the different correlates of female and male children's social competence. Parental depression appeared to have more influence on boys' social functioning while parental alexithymia, pain intensity, and length of exposure to a parent's pain were more important determinants of girls' social competence. However, the specific relationship between parental depression and boys' social competence needs to be further assessed.

This study had several limitations. First, the self-selected nature of participants may have led to the inclusion of mostly well-adjusted chronic pain families and the exclusion of those families with children showing behavior problems. Also, the small sample size limited the potential statistical significance of some analyses and rendered some regression analyses impossible to interpret. Furthermore, most chronic pain

sufferers were female which may have biased the results and limited the generalizability of findings. Also, the gender composition of this sample did not allow for female sufferers to be compared to male sufferers in their functioning nor did it allow analyses of how gender of parent interacts with gender of child in predicting child adjustment. Finally, it may have been preferable to use a more widely-used measure of children's social competence as opposed to the MESSY which has never been used in chronic pain families and which lacks the vast amount of validity studies that other scales have.

Still, the main findings of this study have important implications for clinical professionals working with chronic pain sufferers since they suggest predictors of children's social adjustment in these families. Variables not measured in the current study, such as disability level or parenting quality, may also be important in mediating the impact of chronic pain on family members. Furthermore, the current results underscore the importance of taking gender differences into account when dealing with children of chronic pain sufferers.

## REFERENCES

Ahern, D. K., Adams, A. E., & Follick, M. J. (1985). Emotional and marital disturbances in spouses of chronic low back pain patients. The Clinical Journal of pain, 1, 69-74.

Ahles, T. A., Yunus, M. B., & Masi, A. T. (1987). Is chronic pain a variant of depressive disease? The case of primary fibromyalgia syndrome. Pain, 29, 105-111.

American Psychological Association. (1994). Diagnostic and statistical manual of mental disorders (4th ed.). Washington, DC: Author.

Armistead, L., Klein, K., & Forehand, R. (1995). Parental physical illness and child functioning. Clinical Psychology Review, 15(5), 409-422.

Bagarozzi, D. A. (1985). Family measurement techniques. The American Journal of Family Therapy, 13(3), 66-71.

Bagby, R. M., Parker, J. D. A., & Taylor, G. J. (1994). The Twenty-Item Toronto Alexithymia Scale-I: Item selection and cross-validation of the factor structure. Journal of Psychosomatic Research, 38(1), 23-32.

Bagby, R. M., Taylor, G. J., & Parker, J. D. A. (1994). The Twenty-Item Toronto Alexithymia Scale-II: Convergent, discriminant, and concurrent validity. Journal of Psychosomatic Research, 38(1), 33-40.

Beck, A. T., Rush, A. J., Shaw, B. F., & Emery, G. (1979). Cognitive Therapy of Depression. New York: Guilford Press.

Beck, A. T. & Steer, R. A. (1984). Internal consistencies of the original and revised Beck Depression Inventory. Journal of Clinical Psychology, 40(6), 1365-1367.

Beck, A. T., Steer, R. A., & Garbin, M. G. (1988). Psychometric properties of the Beck Depression Inventory: Twenty-five years of evaluation. Clinical Psychology Review, 8, 77-100.

Beck, A. T., Ward, C. H., Mendelson, M., Mock, J., & Erbaugh, J. (1961). An inventory for measuring depression. Archives of General Psychiatry, 4, 561-571.

Bettes, B. A. (1988). Maternal depression and Motherese: Temporal and intonational features. Child Development, 59, 1089-1096.

Beutler, L. E., Daldrup, R., Engle, D., Guest, P., Corbishley, A., & Meredith, K. E. (1988). Family dynamics and emotional expression among patients with chronic pain and depression. Pain, 32, 65-73.

Bishop, S. R., Edgley, K., Fisher, R., & Sullivan, M. J. L. (1993). Screening for depression in chronic low back pain with the Beck Depression Inventory. Canadian Journal of Rehabilitation, 7(2), 143-148.

Blechman, E. A., McEnroe, M. J., Carella, E. T., & Audette, D. P. (1986). Childhood competence and depression. Journal of Abnormal Psychology, 95(3), 223-227.

Blumer, D. & Heilbronn, M. (1981). The pain-prone disorder: A clinical and psychological profile. Psychosomatics, 22, 395-402.

Brown, J. S., Rawlinson, M. E., & Hardin, D. M. (1982). Family functioning and health status. Journal of Family Issues, 3(1), 91-110.

Bryant, B. K. & DeMorris, K. A. (1992). Beyond parent-child relationships: Potential links between family environments and peer relations. In R. D. Parke & G. W. Ladd (Eds.), Family-Peer Relationships: Modes of Linkage (pp. 159-190). Hillsdale, New Jersey: Lawrence Erlbaum.

Burnett, P. (1987). Assessing marital adjustment and satisfaction: A review. Measurement and Evaluation in Counseling and Development, 20(3), 113-121.

Byerly, F. C. & Carlson, W. A. (1982). Comparison among inpatients, outpatients, and normals on three self-report depression inventories. Journal of Clinical Psychology, 38(4), 797-804.

Carson, J. L. (1991, April). In search of mediating processes: Emotional cues as links between family and peer systems. Poster session presented at the biennial meeting of the Society for Research in Child Development, Seattle, WA.

Cassel, J. (1976). An epidemiological perspective of psychosocial factors in disease etiology. American Journal of Public Health, 64, 1040-1043.

Cavanaugh, S., Clark, D. C., & Gibbons, R. D. (1983). Diagnosing depression in the hospitalized medically ill. Psychosomatics, 24(9), 809-815.

Chun, D. Y., Turner, J. A., & Romano, J. M. (1993). Children of chronic pain patients: Risk factors for maladjustment, Pain, 52, 311-317.

Cohen, S., Sherrod, D. R., & Clark, M. S. (1986). Social skills and the stress-protective role of social support. Journal of Personality and Social Psychology, 50, 963-973.

- Cohn, D. A., Patterson, C. J., & Christopoulos, C. (1991). The family and children's peer relations. Journal of Social and Personal Relationships, 8, 315-346.
- Compas, B. E., Worsham, N. L., Epping-Jordan, J. E., Grant, K. E., Mireault, G., Howell, D. C., & Malcarne, V. L. (1994). When mom or dad has cancer: Markers of psychological distress in cancer patients, spouses, and children. Health Psychology, 13(6), 507-515.
- Conrad, M. & Hammen, C. (1993). Protective and resource factors in high- and low-risk children: A comparison of children with unipolar, bipolar, medically ill, and normal mothers. Development and Psychopathology, 5(4), 593-607.
- Corbishley, M. A., Hendrickson, R., Beutler, L. E., & Engle, D. (1990). Behavior, affect and cognition among psychogenic pain patients in group expressive psychotherapy. Journal of Pain and Symptom Management, 5(4), 241-248.
- Cox, B. J., Kuch, K., Parker, J. D., Shulman, I. D., & Evans, R. J. (1994). Alexithymia in somatoform disorder patients with chronic pain. Journal of Psychosomatic Research, 38(6), 523-527.
- Crook, J., Rideout, E., & Browne, G. (1984). The prevalence of pain complaints in a general population. Pain, 18, 299-314.
- Crook, J., & Tunks, E. (1985). Defining the chronic pain syndrome: An epidemiological method. Clinical Journal of Pain, 1, 159-163.
- Cross, D. G. & Sharpley, C. F. (1981). The Locke-Wallace Marital Adjustment Test reconsidered: Some psychometric findings as regards its reliability and factorial validity. Educational and Psychological Measurement, 41, 1303-1306.
- Custrini, R. J. & Feldman, R. S. (1989). Social competence and nonverbal encoding and decoding of emotions. Journal of Clinical Child Psychology, 18(4), 336-342.
- Daly, E. M., Abramovitch, R., & Pliner, P. (1980). The relation between mothers' encoding and their children's decoding of facial expressions of emotions. Merrill-Palmer Quarterly, 26, 25-31.
- Denham, S. A. (1989). Maternal affect and toddlers' social-emotional competence. American Journal of Orthopsychiatry, 59(3), 368-376.
- Denham, S. A. & Grout, L. (1992). Socialization of emotion: Pathway to preschoolers' emotional and social competence. Genetic, Social and General Psychology Monographs, 118, 75-101.

Denham, S. A., McKinley, M., Couchoud, E. A., & Holt, R. (1989). Emotional and behavioral predictors of preschool peer ratings. Child Development, 61, 1145-1152.

Denham, S. A., Zoller, D., & Couchoud, E. A. (1994). Socialization of preschoolers' emotion understanding. Developmental Psychology, 30(6), 928-936.

Dentch, G. E., O'Farrell, T. J., & Cutter, H. S. G. (1980). Readability of marital assessment measures used by behavioral marriage therapists. Journal of Consulting and Clinical Psychology, 48(6), 790-792.

Doan, B. D. & Wadden N. P. (1989). Relationships between depressive symptoms and descriptions of chronic pain. Pain, 36, 75-83.

Doherty, W. J. & Baird, M. A. (1983). Family Therapy and Family Medicine: Toward the Primary Care of Families. New York: Guilford Press.

Downey, G. & Coyne, J. (1990). Children of depressed parents: An integrative review. Psychological Bulletin, 108(1), 50-76.

Dunn, J. & Brown, J. (1994). Affect expression in the family, children's understanding of emotions, and their interactions with others. Merrill-Palmer Quarterly, 40(1), 120-134.

Dura, J. R. & Beck, S. J. (1988). A comparison of family functioning when mothers have chronic pain. Pain, 35, 79-89.

Ell, K. & Northen, H. (1990). Families and Health Care: Psychosocial Practice. New York: Aldine de Gruyter.

Emery, R. E. (1982). Interparental conflict and children of discord and divorce. Psychological Bulletin, 92, 310-330.

Emery, R. E. & O'Leary, K. D. (1982). Children's perceptions of marital discord and behavior problems of boys and girls. Journal of Abnormal Child Psychology, 10(1), 11-24.

Emery, R., Weintraub, S., & Neale, J. M. (1982). Effects of marital discord on the school behavior of children of schizophrenic, affectively disordered, and normal parents. Journal of Abnormal Child Psychology, 10(2), 215-228.

Endicott, J. (1984). Measurement of depression in patients with cancer. Cancer, 53, 2243-2248.

Engel, G. L. (1959). Psychogenic pain and the pain prone patient. American Journal of Medicine, 26, 899-918.

Feinauer, L. L. & Steele, W. R. (1992). Caretaker marriages: The impact of chronic pain syndrome on marital adjustment. The American Journal of Family Therapy, 20(3), 219-226.

Feldman, R. S., White, J. B., & Lobato, D. (1982). Social skills and nonverbal behavior. In R. S. Feldman (Ed.), Development of Nonverbal Behavior in Children (pp. 259-277). New York: Springer-Verlag.

Feuerstein, M., Papciak, A. S., & Hoon, P. E. (1987). Biobehavioral mechanisms of chronic low back pain. Clinical Psychology Review, 7, 243-273.

Flor, H., Turk, D. C., & Scholz, O. B. (1987). Impact of chronic pain on the spouse: marital, emotional and physical consequences. Journal of Psychosomatic Research, 31(1), 63-71.

Folstein, S. E., Franz, M. L., Jensen, B. A., Chase, G. A., & Folstein, M. F. (1983). Conduct disorder and affective disorder among the offspring of patients with Huntington's Disease. Psychological Medicine, 13, 45-52.

Freyberger, H. (1977). Supportive psychotherapeutic techniques in primary and secondary alexithymia. Psychotherapy and Psychosomatics, 28, 337-342.

Funch, D. P. & Mettlin, C. (1982). The role of support in relation to recovery from breast surgery. Social Sciences and Medicine, 16, 91-98.

Goodman, S. H. (1987). Emory University Project on children of disturbed parents. Schizophrenia Bulletin, 13(3), 412-423.

Goodman, S. H., Brogan, D., Lynch M. E., & Fielding, B. (1993). Social and emotional competence in children of depressed mothers. Child Development, 64, 516-531.

Grych, J. H. & Fincham, F. D. (1990). Marital conflict and children's adjustment: A cognitive-contextual framework. Psychological Bulletin, 108(2), 267-290.

Gupta, M. A. (1986). Is chronic pain a variant of depressive illness? A critical review. Canadian Journal of Psychiatry, 31, 241-248.

Hafstrom, J. L. & Schram, V. R. (1984). Chronic illness in couples: Selected Characteristics, including wife's satisfaction with and perception of marital relationships. Family Relations, 33, 195-203.

Halberstadt, A. G. (1986). Family socialization of emotional expression and nonverbal communication styles and skills. Journal of Personality and Social Psychology, 51, 827-836.



Hammen, C., Adrian, C., Gordon, D., Burge, D., & Jaenicke, C. (1987). Children of depressed mothers: Maternal strain and symptom predictors of dysfunction. Journal of Abnormal Psychology, 96, 190-198.

Hammen, C., Gordon, D., Burge, D., Adrian, C., Jaenicke, C., & Hiroto, D. (1987). Maternal affective disorders, illness, and stress: Risk for children's psychopathology. American Journal of Psychiatry, 144 (6), 736-741.

Hammen, C. & Mayol, A. (1982). Depression and cognitive characteristics of stressful life-event types. Journal of Abnormal Psychology, 91(3), 165-174.

Harder, D. W., Greenwald, D. F., Strauss, J. S., Kokes, R. F., Ritzler, B. A., & Gift, T. E. (1990). Predictors of two-year outcome among psychiatric outpatients. Journal of Clinical Psychology, 46(3), 251-261.

Harrison, D. F. & Westhuis, D. J. (1989). Rating scales for marital adjustment. Journal of Social Service research, 13(1), 87-105.

Hawkins, J. L. (1966). The Locke-Wallace Marital Adjustment Test and Social Desirability. Journal of Marriage and the Family, 28, 193-195.

Haynes, S. N., Follingstad, D. R., & Sullivan, J. C. (1979). Assessment of marital satisfaction and interaction. Journal of Consulting and Clinical Psychology, 47(4), 789-791.

Helsel, W. J., & Matson, J. L. (1984). The assessment of depression in children: The internal structure of the Child Depression Inventory (CDI). Behaviour Research and Therapy, 22, 289-298.

Hendler, N. (1984). Depression caused by chronic pain. Journal of Clinical Psychiatry, 45(3), 30-36.

Honeycutt, J. M. (1986). A model of marital functioning based on an attraction paradigm and social-penetration dimensions. Journal of Marriage and the Family, 48, 651-667.

Hudgens, A. J. (1979). Family-oriented treatment of chronic pain. Journal of Marital and Family Therapy, 5, 67-76.

Hudson, W. W. & Glisson, D. H. (1976). Assessment of marital discord in social work practice. Social Service Review, 50, 293-311.

Hudson, J. I., Hudson, M. S., Pliner, L. F., Goldenberg, D. L., & Pope, H. G. (1985). Fibromyalgia and major affective disorder: Controlled phenomenology and family history study. American Journal of Psychiatry, 142(4), 441-446.

Johnston, J. R., Gonzales, R., & Campbell, L. E. G. (1987). Ongoing postdivorce conflict and child disturbance. Journal of Abnormal Child Psychology, 15(4), 493-509.

Joukamaa, M. & Nurmiko, T. (1987). Alexithymia and chronic pain. Pain, suppl. 4, 122.

Kalliopuska, M. (1985). Relation of ineffective communication of emotion and children's recognition of emotional expressions. Perceptual and Motor Skills, 61, 1175-1178.

Kaufman G. B. & Aronoff, G. M. (1983). The use of psychomotor therapy in the treatment of chronic pain. Psychomotor Theory, Research and Practice, 20(4), 449-456.

Kazdin, A. E. (1992). Research Design in Clinical Psychology (2nd ed.). New York: MacMillan.

Kazdin, A. E., Matson, J. L., & Esveltd-Dawson, K. (1984). The relationship of role-play assessment of children's social skills to multiple measures of social competence. Behaviour Research and Therapy, 22, 129-139.

Kerns, R. D., & Curley, A. D. (1985). A biopsychosocial approach to illness and the family: Neurological diseases across the life-span. In D. C. Turk & R. D. Kerns (Eds.), Health, Illness and Families: A Life-span Perspective. New York: John Wiley & Sons.

Kerns, R. D. & Turk, D. C. (1984). Depression and chronic pain: The mediating role of the spouse. Journal of Marriage and the Family, 46, 845-852.

Krishnan, K. R. R., France, R. D., Pelton, S., McCann, U. D., Davidson, J., & Urban, B. J. (1985). Chronic pain and depression: I. Classification of depression in chronic low back pain patients. Pain, 22, 279-287.

Kunzer, M. B. (1986). Structural family therapy with chronic pain patients. Issues in Mental Health Nursing, 8, 213-222.

Ladd, G. W. (1991). Family-Peer relations during childhood: Pathways to competence and pathology? Journal of Social and Personal Relationships, 8, 307-314.

Ladd, G. W. (1992). Themes and theories: Perspectives on processes in family-peer relationships. In R. D. Parke & G. W. Ladd (Eds.), Family-Peer Relationships: Modes of Linkage (pp. 1-34). Hillsdale, New Jersey: Lawrence Erlbaum Associates.

Laroche, C. (1986). Prevention in high risk children of depressed parents. Canadian Journal of Psychiatry, 31 (2), 161-165.

Lefebvre, M. F. (1981). Cognitive distortions and cognitive errors in depressed psychiatric and low back pain patients. Journal of Consulting and Clinical Psychology, 49(4), 517-525.

Lewis, F. M., Hammond, M. A., & Woods, N. F. (1993). The family's functioning with newly diagnosed breast cancer in the mother: The development of an explanatory model. Journal of Behavioral Medicine, 16(4), 351-369.

Libet, J. M. & Lewinsohn, P. M. (1973). Concept of social skill with special reference to the behavior of depressed persons. Journal of Consulting and Clinical Psychology, 40(2), 304-312.

Lichtman, R. R., Taylor, S. E., & Woods, J. V. (1987). Social support and marital adjustment after breast cancer. Journal of Psychosocial oncology, 5(3), 47-74.

Lieberman, M. A. & Fisher, L. (1995). The impact of chronic illness on the health and well-being of family members. The Gerontologist, 35 (1), 94-102.

Litman, T. J. (1971). Health care and the family. Medical care, 9(1), 67-81.

Litman, T. J. (1974). The family as a basic unit in health and medical care: A sociobehavioral overview. Social Sciences and Medicine, 8, 495-519.

Locke, H. J. & Wallace, K. M. (1959). Short marital adjustment and prediction tests: Their reliability and validity. Marriage and Family Living, 21, 251-255.

Long, N., Forehand, R., Fauber, R., & Brody, G. H. (1987). Self-perceived and independently observed competence of young adolescents as a function of parental marital conflict and recent divorce. Journal of Abnormal Child Psychology, 15(1), 15-27.

Magni, G. (1984). Chronic low back pain and depression: An epidemiological survey. Acta Psychiatrica Scandinavica, 70, 614-617.

Magni, G. (1987). On the relationship between chronic pain and depression when there is no organic lesion. Pain, 31, 1-21.

Magni, G., Andreoli, F., Arduino, C., Arsie, D., Ceccherelli, F., Ambrosio, F., Dodi, G., & Eandi, M. (1987). Modifications of [<sup>3</sup>H]imipramine binding sites in platelets of chronic pain patients treated with mianserin. Pain, 30, 311-320.

Magni, G., Caldieron, C., Rigatti-Luchini, S., & Merskey, H. (1990). Chronic musculoskeletal pain and depressive symptoms in the general population. An analysis of the first National Health and Nutrition Examination Survey data. Pain, 43, 299-307.

Maruta, T. & Osborne, D. (1978). Sexual activity in chronic pain patients. Psychosomatics, 19(9), 531-537.

Matson, J. L. (1990). Matson Evaluation of Social Skills for Youngsters Manual (2nd. ed.). Louisiana State University.

Matson, J. L., Rotatori, A. F., & Helsel, W. J. (1983). Development of a rating scale to measure social skills in children: The Matson Evaluation of Social Skills with Youngsters (MESSY). Behavioural Research, 21(4), 335-340.

Mauksch, H. O. (1974). A social science basis for conceptualizing family health. Social Science and Medicine, 8, 521-528.

Maziade, M., Bernier, H., Thivierge, J., & Cote, R. (1987). The relationship between family functioning and demographic characteristics in an epidemiological study. Canadian Journal of Psychiatry, 32, 526-533.

Mendelson, G. (1982). Alexithymia and chronic pain: Prevalence, correlates and treatment results. Psychotherapy and Psychosomatics, 37, 154-164.

Mikail, S. F. & Von Baeyer, C. L. (1990). Pain, somatic focus, and emotional adjustment in children of chronic headache sufferers and controls. Social Science and Medicine, 31(1), 51-59.

Mohamed, S. N., Weisz, G. M., & Waring, E. M. (1978). The relationship of chronic pain to depression, marital adjustment, and family dynamics. Pain, 5, 285-292.

Myers, J. & Bean, Y. L. (1968). A Decade Later: A Follow-up of Social Class and Mental Illness (pp. 235-237). New York: John Wiley & sons Inc.

Parke, R. D., Cassidy, J., Burks, V. M., Carson, J. L., & Boyum, L. (1992). Familial contribution to peer competence among young children: The role of interactive and affective processes. In R. D. Parke & G. W. Ladd (Eds.), Family-Peer Relationships: Modes of Linkage (pp. 107-134). Hillsdale, New Jersey: Lawrence Erlbaum Associates.

Parker, J. D. A., Bagby, R. M., & Taylor, G. J. (1991). Alexithymia and depression: Distinct or overlapping constructs? Comprehensive Psychiatry, 32(5), 387-394.

Parker, J. D. A., Bagby, R. M., Taylor, G. J., Endler, N. S., & Schmitz, P. (1993). Factorial validity of the 20-item Toronto Alexithymia Scale. European Journal of Personality, 7, 221-232.

Parker, J., Taylor, G., & Bagby, M. (1993). Alexithymia and the processing of emotional stimuli: An experimental study. New Trends in Experimental and Clinical Psychiatry, 9(1), 9-14.

Patterson, C. J., Griesler, P. C., Vaden, N. A., & Kupersmidt, J. B. (1992). Family economic circumstances, life transitions, and children's peer relations. In R. D.

Parke & G. W. Ladd (Eds.), Family-Peer Relationships: Modes of Linkage (pp. 385-424). Hillsdale, New Jersey: Lawrence Erlbaum Associates.

Patterson, C. J., Vaden, N., & Kupersmidt, J. B. (1991). Family background, recent life events and peer rejection during childhood. Journal of Social and Personal Relationships, 8, 347-361.

Peterson, J. & Zill, N. (1986). Marital disruption, parent-child relationships, and behavior problems in children. Journal of Marriage and the Family, 48, 295-307.

Philipps, H. & Jahanshahi, M. (1985). The effects of persistent pain: The chronic headache sufferer. Pain, 21, 163-176.

Pilowski, I. & Spence, N. D. (1976). Pain, anger and illness behaviour. Journal of Psychosomatic Research, 20, 411-416.

Pinsky, J. J. (1978). Chronic, intractable, benign pain: A syndrome and its treatment with intensive short-term group psychotherapy. Journal of Human Stress, 4(3), 17-21.

Porter, B. & O'Leary, K. D. (1980). Marital discord and childhood behavior problems. Journal of Abnormal Child Psychology, 8, 287-295.

Rankin S. H. & Weekes D. P. (1989). Life-span development: A review of theory and practice for families with chronically ill members. Scholarly Inquiry for Nursing Practice: An International Journal, 3(1), 3-27.

Reisbord, L. S. & Greenland, S. (1985). Factors associated with self-reported back-pain prevalence: A population-based study. Journal of Chronic Disease, 38(8), 691-702.

Reynolds, W. M. & Gould, J. W. (1981). A psychometric investigation of the Standard and Short Form of the Beck Depression Inventory. Journal of Consulting and Clinical Psychology, 49(2), 306-307.

Richters, J. & Pellegrini, D. (1989). Depressed mothers' judgments about their children: An examination of the depression-distortion hypothesis. Child Development, 60, 1068-1075.

Rickard, K. (1988). The occurrence of maladaptive health-related behaviors and teacher-rated conduct problems in children of chronic low back pain patients. Journal of Behavioral Medicine, 11 (2), 107-115.

Romano, J. M. & Turner, J. A. (1985). Chronic pain and depression: Does the evidence support a relationship? Psychological Bulletin, 97(1), 18-34.

Rowat, K. M. & Knafl, K. A. (1985). Living with chronic pain: The spouse's perspective. Pain, 23, 259-271.

Roy, R. (1985). Chronic pain and marital difficulties. Health and Social Work, 10(3), 199-207

Roy, R. (1987). Impact of chronic pain on family systems. Pain, suppl. 4, 413.

Roy, R. (1992). The Social Context of the Chronic Pain Sufferer. Toronto: Toronto Press.

Schaffer, B. C., Donlon, P. T., & Bittle, R. M. (1980). Chronic pain and depression: A clinical and family history survey. American Journal of Psychiatry, 137(1), 118-120.

Schwartzman, J. (1985). Health, illness and the family: An evolutionary perspective. Family Systems Medicine, 3, 447-452.

Schwenk, T. L. & Hughes, C. C. (1983). The family as a patient in family medicine: Rhetoric or reality? Social Science and Medicine, 17, 1-16.

Shanfield, S. B., Heiman, E. M., Cope, D. N., & Jones, J. R. (1979). Pain and the marital relationship: Psychiatric distress. Pain, 7, 343-351.

Sifneos, P. E. (1975). Problems of psychotherapy of patients with alexithymic characteristics and physical disease. Psychotherapy and Psychosomatics, 26, 75-70.

Sivik, T. & Hosterey, U. (1992). The Thematic Apperception Test as an aid in understanding the psychodynamics of development of chronic idiopathic pain syndrome. Psychotherapy and Psychosomatics, 57, 57-60.

Sriram, T. G., Chaturvedi, S. K., Gopinath, P. S., & Shanmugham, V. (1987). Alexithymic characteristics in patients with psychogenic pain disorder: A controlled study. Pain, suppl. 4, 121.

Strauss, C. C., Lease, C. A., Kazdin, A. E., Dulcan, M. K., & Last C. G. (1989). Multimethod assessment of the social competence of children with anxiety disorders. Journal of Clinical Child Psychology, 18, 184-189.

Strong, J., Ashton, R., & Stewart, A. (1994). Chronic low back pain: Toward an integrated psychosocial assessment model. Journal of Consulting and Clinical Psychology, 62(5), 1058-1063.

Tabachnik, B. G. & Fidell, L. S. (1989). Using Multivariate Statistics (2nd ed.). New York: Harper Collins.

Taylor, G. J., Bagby, M., & Parker, J. D. A. (1992). The Revised Toronto Alexithymia Scale: Some reliability, validity, and normative data. Psychosomatic Medicine, 50, 500-509.

Taylor, G. J., Ryan, D. P., & Bagby, R. M. (1985). Toward the development of a new self-report alexithymia scale. Psychotherapy and Psychosomatics, 44, 191-199.

Thomas, M. & Roy, R. (1989). Pain patients and marital relations. The Clinical Journal of pain, 5, 255-259.

Turk, D. C. & Salovey, P. (1984). "Chronic pain as a variant of depressive disease": A critical reappraisal. The Journal of Nervous and Mental Disease, 172(7), 398-403.

Turner, J. A. & Romano, J. M. (1984). Self-report screening measures for depression in chronic pain patients. Journal of Clinical Psychology, 40(4), 909-913.

Waring, E., McElrath, D., Lefcoe, D., & Weisz, G. (1981). Dimensions of intimacy in marriage. Psychiatry, 44, 169-175.

Wetchler, J. L. (1992). Family treatment of a thirteen year-old with chronic stomach pain. Journal of Family Psychotherapy, 3(4), 1-14.

Wierzbicki, M. & McCabe, M. (1988). Social skills and subsequent depressive symptomatology in children. Journal of Clinical Child Psychology, 17(3), 203-208.

Williams, A. & Richardson, P. H. (1993). What does the BDI measure in chronic pain? Pain, 55, 259-266.

Woods, N. F. & Lewis, F. M. (1995). Women with chronic illness: Their views of their families adaptation. Health Care for Women International, 16, 135-148.

Zahn-Waxler, C., Iannotti, R. J., Cummings, E. M., & Denham, S. (1990). Antecedents of problem behaviors in children of depressed mothers. Development and Psychopathology, 2, 271-291.

Zahn-Waxler, C., Mayfield, A., Radke-Yarrow, M., McKnew, D., Cytryn, L., & Davenport, Y. (1988). A follow-up investigation of offspring of parents with bipolar disorder. American Journal of Psychiatry, 145(4), 506-509.

## APPENDIX A

## Screening Questionnaire for Pain Group

Please answer the following questions with either true (T) or false (F). If you answer (F) to one of the questions in **bold**, skip to the next question in **bold**.

1.     T     F     **I have been in pain for at least 6 months**  
If you answered (F): How long have you been in pain? \_\_\_\_\_
2.     T     F     No clear physical cause has been found to explain why I am in pain  
If a physical cause has been found, which one? \_\_\_\_\_
3.     T     F     I have no other chronic physical illness other than my pain  
If you do, which chronic illness? \_\_\_\_\_

---

4.     T     F     **I have not been diagnosed with a mental disorder**  
If you have, what was the diagnosis? \_\_\_\_\_

---

5.     T     F     **I am married or in a common law relationship**  
If not, are you: single \_\_\_\_\_ divorced/separated \_\_\_\_\_ Other: \_\_\_\_\_
6.     T     F     I am living with my spouse or common law partner  
How long have you been living together? \_\_\_\_\_
7.     T     F     My spouse is healthy (has no chronic physical or mental illness, no pain, no depression)  
IF NOT, what illness is your spouse suffering from? \_\_\_\_\_  
How long have you been living together? \_\_\_\_\_

---

8.     T     F     **I and/or my spouse have a child who is between 4 and 12 years old who lives at home**
9.     T     F     Of those children who are between 4 and 12 years old, at least one child is healthy (no chronic physical illness, no pain, no mental illness)
10.    T     F     My spouse and I are the biological parents of those of our children who are between 4 and 12 years old and healthy  
IF NOT:  
Have they lived with you and your current spouse all their life?  
Yes \_\_\_\_\_ No \_\_\_\_\_
11.    T     F     My other immediate family members (e.g.: other children, live-in relatives) are healthy (no chronic physical disease, no mental illness)  
IF NOT, specify who is sick and what sickness it is: \_\_\_\_\_



APPENDIX B  
Screening Questionnaire for Control Group

Please answer the following questions with either true (T) or false (F). If you answer (F) to a question in **bold**, go the next question in **bold**.

1.      T      F      **I have no chronic illness (physical or mental) other than depression, if any**
  
2.      T      F      **I have no pain that has persisted for more than six months:**  
\_\_\_\_\_
  
3.      T      F      **I am married or in a common law relationship**  
  
If not, are you: single:\_\_\_separated/divorced:\_\_\_Other: \_\_\_\_\_.
  
4.      T      F      I am living with my spouse or common law partner  
  
How long have you been living together? \_\_\_\_\_.
  
5.      T      F      My spouse is healthy (has no chronic mental or physical illness, no pain, no depression)  
\_\_\_\_\_
  
6.      T      F      **I and/or my spouse have at least one child who is between 4 and 12 years old who lives at home**
  
7.      T      F      Of those children between 4 and 12 years old, at least one child is healthy (no chronic physical illness, no pain, no mental illness)
  
8.      T      F      My current spouse and I are the biological parents of those of our children who are between 4 and 12 years old and healthy  
  
IF NOT:  
Have they lived with you and your current spouse all of their lives?  
Yes\_\_\_No\_\_\_\_\_.
  
9.      T      F      My other immediate family members (e.g.: other children, live-in relatives) are healthy (no chronic physical illness, no mental illness)  
IF NOT, specify who is sick and what sickness it is:\_\_\_\_\_.

## APPENDIX C

**Informed Assent Form  
for Children in Pain Group**  
**Investigator:** Sophie Beugnot  
University of Windsor  
Department of Psychology

Why am I doing this study? I want to see if people who are often in pain have children who behave differently around other people their own age compared to children who have parents that are not in pain. Since you have a parent who has pain a lot of the time, I would like to see if you act in special ways around your classmates at school.

What will you do? If you agree to be part of this study, you won't have to do anything. What will happen is that your teacher, Ms./Mr. \_\_\_\_\_ will be sent a sheet with questions on it that ask him/her about how you behave with your classmates. Your teacher will not know why you are participating in this study and therefore will not know that you have a parent who is in pain. We thought it was not a good idea to tell your teacher about personal things about your parents. Your teacher will then return this sheet to us and no one else will be able to see what is on that sheet. Your parents have agreed not to look at what your teacher said either. That way, you will not be worried about how your parents may react to what your teacher said about you. We also think it is better if you don't know what your teacher said about you, that way, your feelings about yourself and about your teacher won't change because of your participation in this study.

What if you don't want to participate? You do not have to be part of this study. We are just asking you if you would like to participate. If you want to participate now and you change your mind later, while the study is being done, you will be able to stop your participation at any time you wish to. There won't be any negative consequences if you choose not to participate. You also may want to ask questions about this study. If you do, ask your parents to ask me and I will make sure that all your questions are answered.

I know that if I agree to participate in this study, my teacher will answer questions about how I behave around my friends at school. No one will be told about what my teacher says about me. I agree not to ask what my teacher said about me.

I agree to do this and my mom/dad has agreed to let me participate. I am allowed to change my mind at any time and to stop participating without any negative consequences.

I, \_\_\_\_\_, have read the assent form/ have been read the assent form by the researcher, and I agree to participate in this study.

Signature: \_\_\_\_\_

Date: \_\_\_\_\_

APPENDIX D  
**Informed Assent Form**  
**for Children in Control Group**  
Investigator: Sophie Beugnot  
 University of Windsor  
 Department of Psychology

Why am I doing this study? I want to see if children of healthy parents act differently around their friends at school than children who have a parent who has pain a lot of the time. Since you have healthy parents who do not have pain, I would like to see how you act around people your own age.

What will you do? If you agree to be part of this study, you won't have to do anything. What will happen is that your teacher, Ms./Mr. \_\_\_\_\_ will be sent a sheet with questions on it that ask him/her about how you behave with your classmates. Your teacher will be told that you are part of a study on children's behavior at school. Your teacher will then return this sheet to us and no one else will be able to see what is on that sheet. Your parents have agreed not to look at what your teacher said either. That way, you will not be worried about how your parents may react to what your teacher said about you. We also think it is better if you don't know what your teacher said about you, that way, your feelings about yourself and about your teacher will not change because of your participation in this study.

What if you don't want to participate? You do not have to be part of this study. We are just asking you if you would like to participate. If you want to participate now and you change your mind later, while the study is being done, you will be able to stop your participation at any time you wish to. There won't be any negative consequences if you choose not to participate. You also may want to ask questions about this study. If you do, ask your parents to ask me and I will make sure that all your questions are answered.

I know that if I agree to participate in this study, my teacher will answer questions about how I behave around my friends at school. No one will be told about what my teacher says about me. I agree not to ask about what my teacher said about me.

I agree to do this and my mom/dad has agreed to let me participate. I am allowed to change my mind at any time and to stop participating without any negative consequences.

I, \_\_\_\_\_, have read the assent form/ have been read the assent form by the researcher, and I agree to participate in this study.

Signature: \_\_\_\_\_

Date: \_\_\_\_\_

**APPENDIX E**  
**Consent Form for Parents' Participation**

**Investigator:** Sophie Beugnot  
 University of Windsor  
 Department of Psychology

**Information for participants:**

I am currently doing research for my M.A. thesis in psychology which is entitled "Children of Chronic Pain Sufferers: Assessing their Social Competence". This study has been reviewed by the Ethics Committee of the department of psychology of the University of Windsor. The purpose of the study is to assess the level of social competence in children of chronic pain sufferers and find out how it is affected by some parental characteristics. This will be done by comparing chronic pain parents and their child with non-pain, healthy parents and their child. If you decide to participate in the study, your involvement will take no more than two hours of your time.

First, your child will be asked to sign a form indicating his/her assent and will have the opportunity to refuse to participate in this study. You will be asked to fill out four questionnaires assessing your mood, ability to express emotions and your marital satisfaction. You will also be asked to sign a release of information form allowing us to send a questionnaire to your child's primary teacher who will be assessing his or her level of social competence. Instructions to the teacher will state that your child's participation in this study does not mean that he/she is different in any way from other children. Your costs of travel to the University where testing will take place will be reimbursed ( up to \$2 for gas if you travel by car or bus tickets for you and your child).

All results obtained about you and your child in this study will be kept confidential and you will not have access to these results. If you have reasons to be concerned about his social development or behavior, we have included a list of places where you may have your child evaluated if you wish to. Although there are no foreseeable risks in participating in this study, we have also included a list of places you may go to for help. In general, most people find it enjoyable to participate in these types of studies.

Your participation is strictly voluntary and you will be free to refuse or stop at any time to participate without penalty. If you have any questions or complaints, feel free to contact me at 977-2661 or any of the following persons at any time before, during or after the study:

Dr. Cheryl Thomas  
 Research Supervisor  
 (519) 253-4232 ext. 2252

Dr. Sylvia Voelker  
 Chairperson, Ethics Committee  
 (519) 253-4232 ext. 2249

## 2. Consent

Please read the following paragraph, and, if you agree to participate, please sign below.

I understand that any information about me obtained from this research will be kept strictly confidential. I agree not to have access to scores obtained either by myself or my child on the questionnaires administered in this study. I understand the information contained in this consent form and I voluntarily consent to participate in the study entitled " Children of Chronic Pain Sufferers: Assessing their Social Competence".

I also voluntarily consent to my child \_\_\_\_\_ participating in this study.

Signature\_\_\_\_\_ Date\_\_\_\_\_

Investigator\_\_\_\_\_ Date\_\_\_\_\_

Please place your initials here to acknowledge your receipt of a copy of the consent form. \_\_\_\_

## Referral List

### For adults:

Several types of psychological services are available at Windsor Regional Hospital at:

1453 Prince Road  
Windsor, Ontario  
N9C 3Z4  
tel.: (519) 257-5125

Help is also available for couples experiencing marital difficulties at:

Catholic Family Services  
677 Victoria  
Windsor, Ontario  
N9A 4N3  
tel.: (519) 254-5164

### For children:

Help and services for children are available at:

Regional Child Center  
3901 Cannaught Ave.  
Windsor, Ontario  
N9C 4H4  
tel.: (519) 257-5215  
After hours: (519) 257-5274

Maryvale Adolescent and Family Services  
3640 Wells St.  
Windsor, Ontario  
N9C 1T9  
tel.: (519) 258-0484

APPENDIX F  
**Release of Information Consent Form**  
Investigator: Sophie Beugnot  
 University of Windsor  
 Department of Psychology

Dear Parent or Guardian,

We would like to ask your permission to send to your child's teacher a questionnaire designed to measure your child's level of social competence. The teacher will be chosen based on the amount of contact he or she has with your child. The teacher assumed to have the most contact with your child will be sent the questionnaire. Upon receipt of a copy of this signed release of information form, the teacher will be asked to fill out the questionnaire and return it to us. Information regarding your child's level of social competence will be kept completely confidential and your child's name will not appear on any form except the release of information consent form, which will be kept separate from the completed questionnaire. If you have any questions or complaints, please contact me at 977-2661 or one of the following persons at any time before, during or after the study:

Dr. Cheryl Thomas  
 Research Supervisor  
 (519) 253-4232 ext. 2252

Dr. Sylvia Voelker  
 Chairperson, Ethics Committee  
 (519) 253-4232 ext. 2249

Consent

Please read the following paragraph and, if you agree that the teacher fill out the questionnaire assessing your child's social competence and return it to us for our study, please sign below.

I have read and I understand the release of information form. I give consent to the teacher, Mr./Ms. \_\_\_\_\_ filling out a social competence questionnaire assessing \_\_\_\_\_'s social competence and returning it to the investigator of the study entitled "Children of Chronic Pain Sufferers: Assessing their Social Competence". I understand that all information will be kept strictly confidential.

Signature\_\_\_\_\_

Date\_\_\_\_\_

Investigator\_\_\_\_\_

Date\_\_\_\_\_

APPENDIX G  
Demographic Questionnaire for Pain Group

---

1. Age: \_\_\_\_\_
  2. Sex: M      F
  3. Occupation: \_\_\_\_\_
  5. Education:
    - a/ \_\_\_\_\_ Less than 7 years of schooling
    - b/ \_\_\_\_\_ Completed at least 7th grade
    - c/ \_\_\_\_\_ Some high school
    - d/ \_\_\_\_\_ Completed high school
    - e/ \_\_\_\_\_ Some university or college
    - f/ \_\_\_\_\_ University or college degree
    - g/ \_\_\_\_\_ Graduate degree
  4. Spouse's occupation: \_\_\_\_\_
  6. Spouse's education:
    - a/ \_\_\_\_\_ Less than 7 years of schooling
    - b/ \_\_\_\_\_ Completed at least 7th grade
    - c/ \_\_\_\_\_ Some high school
    - d/ \_\_\_\_\_ Completed high school
    - e/ \_\_\_\_\_ Some university or college
    - f/ \_\_\_\_\_ University or college degree
    - g/ \_\_\_\_\_ Graduate degree
  7. Employment status:
    - a/ \_\_\_\_\_ full time
    - b/ \_\_\_\_\_ part time
    - c/ \_\_\_\_\_ retired
    - d/ \_\_\_\_\_ disabled
    - e/ \_\_\_\_\_ unemployed
    - f/ \_\_\_\_\_ other: \_\_\_\_\_
  8. Age of spouse: \_\_\_\_\_
  9. Years of marriage: \_\_\_\_\_
- 

**Pain:**

10. Pain location (please check one or more of the following options):
  - a/ \_\_\_\_\_ Head
  - b/ \_\_\_\_\_ Neck/shoulders
  - c/ \_\_\_\_\_ Back
  - d/ \_\_\_\_\_ Limbs
  - e/ \_\_\_\_\_ Extremities(hands/feet)
  - f/ \_\_\_\_\_ Stomach
  - g/ \_\_\_\_\_ Other (specify): \_\_\_\_\_
11. Pain onset/duration:
 

How many years/months ago did your pain start? \_\_\_\_\_
12. Pain frequency:
 

How often are you in pain?

  - a/ \_\_\_\_\_ All the time
  - b/ \_\_\_\_\_ Once a day
  - c/ \_\_\_\_\_ Once a week or more
  - d/ \_\_\_\_\_ Once every two weeks or more
  - e/ \_\_\_\_\_ Once a month or more
  - f/ \_\_\_\_\_ Once every 6 months or more



**13. Pain intensity:**

On the following scale, with (0) meaning no pain at all and (10) meaning the worst pain imaginable, describe how intense your pain is, on average, by circling the appropriate number:

0 1 2 3 4 5 6 7 8 9 10

14. Have you been diagnosed with a specific type of pain disorder (for example, fibromyalgia or migraine)? Yes \_\_\_ No \_\_\_  
If Yes, which one? \_\_\_\_\_

15. Did your pain start as a result of an injury? Yes \_\_\_ No \_\_\_

16. Have you ever had surgery for your pain? Yes \_\_\_ No \_\_\_  
If Yes, how many? \_\_\_\_\_  
When? \_\_\_\_\_

17. Are you presently taking any medication for your pain? Yes \_\_\_ No \_\_\_  
If Yes, what kind of medication? \_\_\_\_\_  
How long have you been taking it? \_\_\_\_\_

**Depression:**

18. Have you ever been diagnosed with depression)? Yes \_\_\_ No \_\_\_

If Yes,

19. When did you suffer from depression? \_\_\_\_\_  
20. Are you still depressed now? \_\_\_\_\_  
21. How long have you been depressed? \_\_\_\_\_  
22. Have you ever taken anti-depressants? \_\_\_\_\_  
23. Are you taking anti-depressants now? \_\_\_\_\_

**Children:**

24. How many children do you have? \_\_\_\_\_  
25. Are some of these children from a previous marriage? Yes \_\_\_ No \_\_\_  
26. Are some of these children your spouse's children? Yes \_\_\_ No \_\_\_  
27. Have any of them been diagnosed with a behavioral or emotional disturbance? Yes \_\_\_ No \_\_\_  
If yes, please indicate which one has, by putting a (D) next to their name below:

Indicate their name, age, sex and the grade they are in:

Name:	sex:	age:	grade:
Name:	sex:	age:	grade:
Name:	sex:	age:	grade:

APPENDIX H  
Demographic Questionnaire for Control Group

---

1. Age: \_\_\_\_\_
2. Sex: M      F
3. Occupation: \_\_\_\_\_
4. Spouse's occupation: \_\_\_\_\_
5. Education:
  - a/ \_\_\_\_\_ Less than 7 years of schooling
  - b/ \_\_\_\_\_ Completed at least 7th grade
  - c/ \_\_\_\_\_ Some high school
  - d/ \_\_\_\_\_ Completed high school
  - e/ \_\_\_\_\_ Some university or college
  - f/ \_\_\_\_\_ University or college degree
  - g/ \_\_\_\_\_ Graduate degree
6. Spouse's education:
  - a/ \_\_\_\_\_ Less than 7 years of schooling
  - b/ \_\_\_\_\_ Completed at least 7th grade
  - c/ \_\_\_\_\_ Some high school
  - d/ \_\_\_\_\_ Completed high school
  - e/ \_\_\_\_\_ Some university or college
  - f/ \_\_\_\_\_ University or college degree
  - g/ \_\_\_\_\_ Graduate degree
7. Employment status:
  - a/ \_\_\_\_\_ full time
  - b/ \_\_\_\_\_ part time
  - c/ \_\_\_\_\_ retired
  - d/ \_\_\_\_\_ disabled
  - e/ \_\_\_\_\_ unemployed
  - f/ \_\_\_\_\_ other: \_\_\_\_\_
8. Age of spouse: \_\_\_\_\_
9. Years of marriage: \_\_\_\_\_

**Depression:**

18. Have you ever been diagnosed with depression)? Yes \_\_\_\_ No \_\_\_\_

If Yes,

19. When did you suffer from depression? \_\_\_\_\_
  20. Are you still depressed now? \_\_\_\_\_
  21. How long have you been depressed? \_\_\_\_\_
  22. Have you ever taken anti-depressants? \_\_\_\_\_
  23. Are you taking anti-depressants now? \_\_\_\_\_
- 

**Children:**

24. How many children do you have? \_\_\_\_\_
  25. Are some of these children from a previous marriage? Yes \_\_\_\_ No \_\_\_\_
  26. Are some of these children your spouse's children? Yes \_\_\_\_ No \_\_\_\_
  27. Have any of them been diagnosed with a behavioral or emotional disturbance? Yes \_\_\_\_ No \_\_\_\_
- If yes, please indicate which one has, by putting a (D) next to their name below:

Indicate their name, age, sex and the grade they are in:

Name:	sex:	age:	grade:
Name:	sex:	age:	grade:

APPENDIX I  
Instructions to Teacher

Mr./Ms. \_\_\_\_\_,

I am a graduate student at the University of Windsor, currently carrying out research on the social development of children between the ages of 4 and 12 years old. Mr./Ms. \_\_\_\_\_ and \_\_\_\_\_ have agreed to participate in this study. This study includes a control sample. Receipt of this form should NOT be interpreted as an indication that this child has social problems or characteristics that may set him or her apart from the group.

You will find included in this envelope a Release of Information Form and a questionnaire called the Matson Evaluation of Social Skills for Youngsters. The Release of Information Form allows you to answer the questionnaire about \_\_\_\_\_'s behavior and attitudes toward others and to return it to me. Your cooperation in this study will be greatly appreciated. Your answers on the questionnaire will be strictly confidential and Mr./Ms. \_\_\_\_\_ and \_\_\_\_\_ have agreed not to look at them. Once you have completed the questionnaire, please place it in the return envelope and mail it as soon as possible. You may keep the Release of Information Form.

If you have any questions about this study or about your participation, please feel free to contact me at 977-2661 or one of the following persons:

Dr. Cheryl Thomas  
Research Supervisor  
(519) 253-4232 ext. 2252

Dr. Sylvia Voelker  
Chairperson, Ethics Committee  
(519) 253-4232 ext. 2249

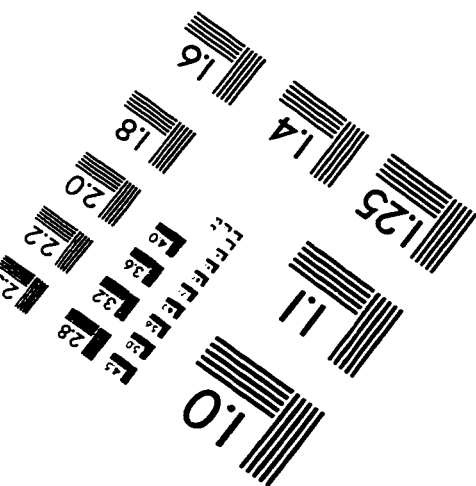
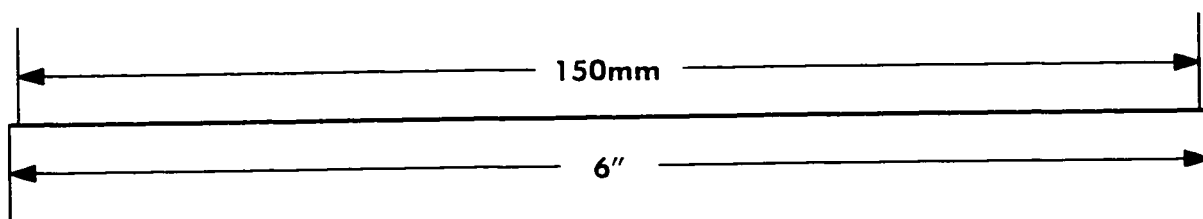
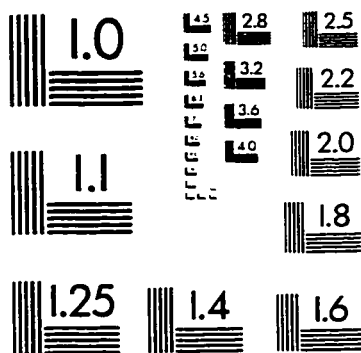
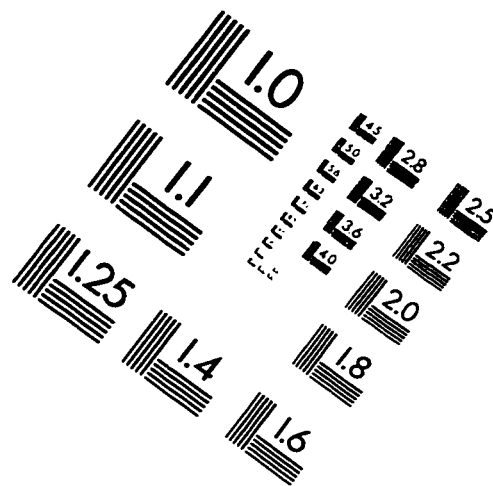
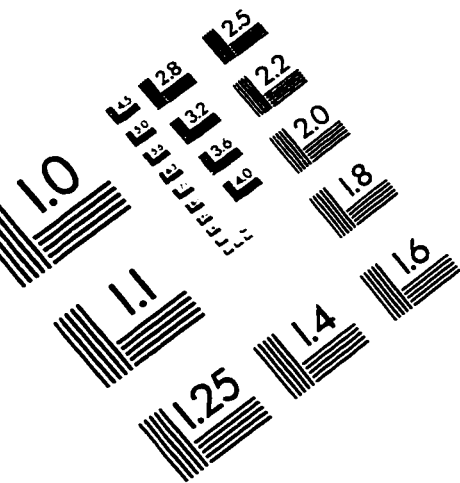
Sincerely yours,

Sophie Beugnot  
University of Windsor  
Department of Psychology  
Windsor, Ontario  
N9B 3P4

## VITA AUCTORIS

Sophie Beugnot was born in 1972 in Montreal, Quebec. She graduated from College Stanislas where she obtained her French Baccalaureate in 1990. From there she went on to McGill University where she graduated with great distinction and obtained her B.Sc. in Psychology in 1993. Before continuing toward graduate school, Sophie spent over a year working as a coordinator and research assistant at the Pain Management Center of the Royal Victoria Hospital. She then went on to become a graduate student in adult clinical psychology at the University of Windsor, where she has been enrolled in the doctoral program since September, 1994.

# IMAGE EVALUATION TEST TARGET (QA-3)



APPLIED IMAGE, Inc  
1653 East Main Street  
Rochester, NY 14609 USA  
Phone: 716/482-0300  
Fax: 716/288-5989

© 1993, Applied Image, Inc., All Rights Reserved

