

**Conflict in Sibling Relationships:  
An Analysis of the Relationship of  
Demands and Resources to Psychological Distress**

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**A Thesis**

**Submitted to the Faculty of Graduate Studies  
in Partial Fulfillment of the Requirements  
for the Degree of**

**Master of Arts**

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**Conflict in Sibling Relationships: An Analysis of the Relationship of  
Demands and Resources to Psychological Distress**

**BY**

**Kelly Hutton**

**A Thesis/Practicum submitted to the Faculty of Graduate Studies of The University**

**of Manitoba in partial fulfillment of the requirements of the degree**

**of**

**Master of Arts**

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## Abstract

Sibling interactions are among the most enduring and important influences for many people. Unfortunately, these relationships are often characterized by conflict which may continue into adulthood. This study explored the relationship of sibling conflict to psychological distress using a transactional model of the stress process. The five independent variables of this model can be classified as either demands (i.e., sibling conflict and daily hassles) or resources (i.e., self-esteem, social support, and approach coping). The relationship between each variable and distress (i.e., both psychological and somatic symptoms of distress) was assessed separately. Participants completed a self-report questionnaire consisting of eight sections measuring: (a) sibling conflict, (b) daily hassles, (c) self-esteem, (d) approach coping, (e) social support, (f) psychological distress, (g) somatic distress, and (h) demographic information. Of the 410 participants recruited, 258 were chosen, based on a cut-off score of 2.25 on sibling conflict, to make-up the subsample. This cut-off score was chosen to ensure higher levels of sibling conflict and to reduce restriction of range problems. All tests of hypotheses were performed using the subsample. It was hypothesized that the demands would be positively related to distress while the resources would be negatively related to distress. The hypotheses were confirmed for all of the variables except Approach coping. Further, multiple regression analyses were used to assess the joint contribution of demands, as well as resources, as they relate to distress. Analyses revealed that the combination of demands (i.e., sibling conflict and daily hassles) did not improve upon the individual contributions of the variables. The combination of resources explained more of the variance than any of the resource variables alone. There was support for the proposed stress process model.

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## Introduction

Sibling interactions are among the most important influences throughout a person's lifetime. Therefore, it is important to understand the relationship of negative sibling interactions (i.e., sibling conflict) to psychological distress. The sibling relationship is usually the longest relationship that an individual will experience in his or her lifetime, even among non-full siblings (Cicirelli, 1995; Gerace, Camilleri, & Ayres, 1993). Siblings begin to affect one another from the first day that they are introduced.

Sibling relationships are unique because they are ascribed through birth or marriage rather than chosen relationships (Cicirelli, 1995). In childhood and adolescence, the sibling relationship is one of intimate daily contact as siblings interact within the home, whereas in adulthood the sibling relationship is usually maintained at a distance by telephone communication, letters, through parents, and periodic visits. The daily contact in childhood includes a range of highly positive to highly conflicted interactions. Brody (1998) suggests that sibling relationships, comprised of a balance of both prosocial and conflicted interactions, create experiences that are most likely to nurture children's social, cognitive, and psychological development. Although adult sibling relationships are often not characterized by daily contact, a national survey found that half of 7,700 respondents maintained their relationship through seeing or talking to their sibling at least monthly (Cicirelli, 1995). As a result of less intimacy during adulthood, the sibling relationship is more subject to change or disruption due to external forces and unexpected life events. When adult siblings live together there is more daily contact and, therefore, an increased risk of having conflicting interactions. Siblings have a long history of shared and non-shared experiences. Siblings continue to share their experiences either directly or indirectly

(e.g., through parents or others) with each other. Cicirelli emphasizes that the sibling relationship, because of its unique characteristics, is a very important relationship throughout a person's lifetime. Stressful situations are likely to occur between siblings and, therefore, it is important to understand the stress process in this context.

A transactional model, including risk and protective factors, may be used to understand the effect of stressful sibling relationships on psychological well-being (Compas, Davis, Forsythe, & Wagner, 1987). Risk factors for developing psychological distress are the demands that people perceive to be placed upon them. The current study focuses on demands or stressors that are associated with the sibling relationship (i.e., sibling conflicts), as well as general daily hassles that are not tied to the sibling relationship. When the demands placed upon individuals are many (e.g., high levels of conflict associated with a sibling), psychological distress is likely to result, unless there is an abundance of protective factors present. Protective factors are resources that people perceive to be available to them. Resources include high self-esteem, social support, and approach coping strategies. When people perceive that there are few demands placed upon them or that they have an abundance of resources, the balance of demands and resources result in low levels of distress. Unfortunately, people experience situations where they perceive a multitude of demands and few resources. In these cases, psychological distress is likely to result. Psychological distress may be manifested in psychological or somatic symptoms. Therefore, psychological distress will be referred to as "distress" and the symptoms will be described as either psychological or somatic distress for this study. The stress process will be discussed next in detail.

## The Stress Process

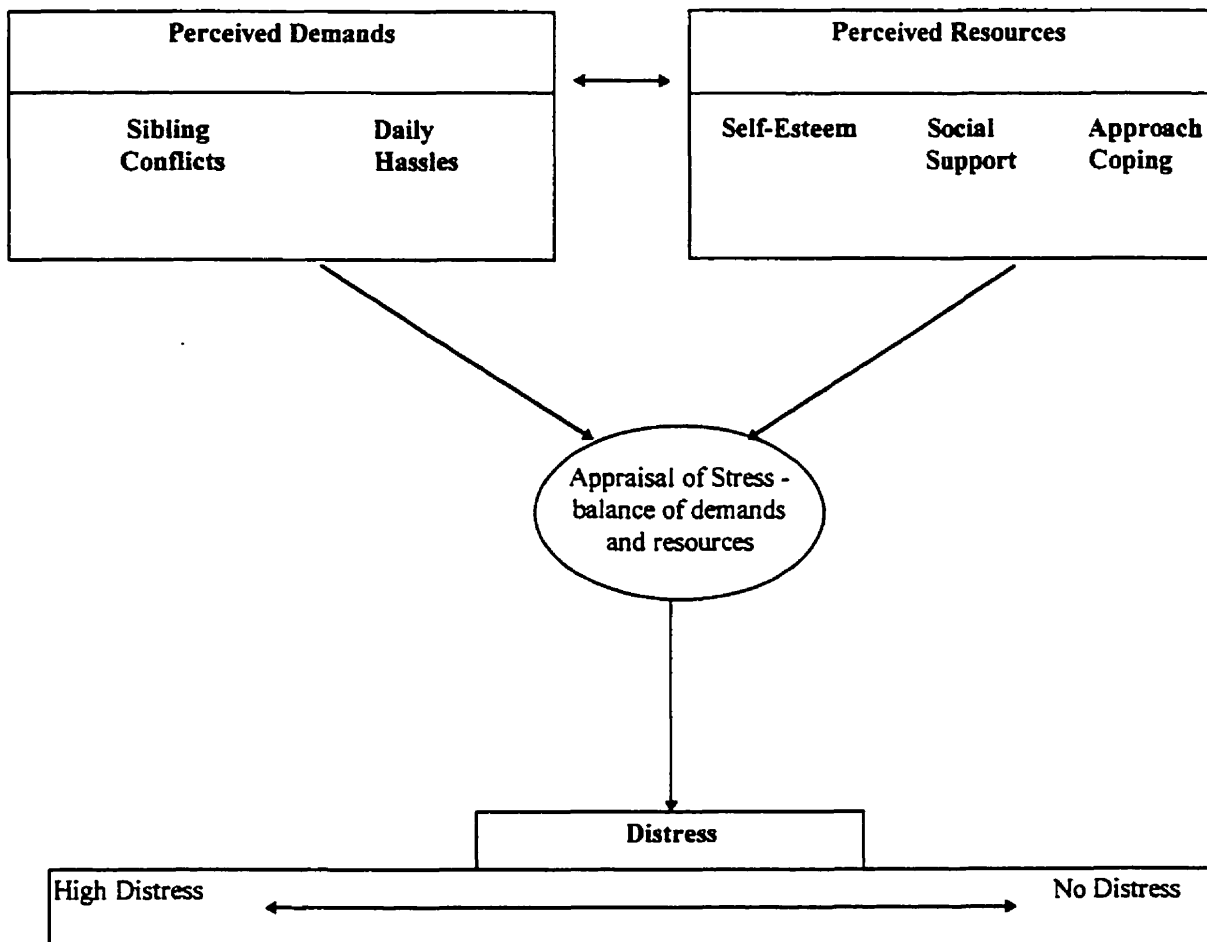
### Definition of Key Concepts

The concept of stress is not always clearly defined. Often the terms stressors, stress, and strain are used interchangeably. Some people use the word stress to refer to the actual problems or threats that people face, whereas others refer to the emotional response to the problems (Wheaton, 1994). This paper will refer to the former as stressors (i.e., the stimulus) and the latter as distress (i.e., psychological stress). The term stress is used to describe the entire stress process. Stressors are defined as certain life events or occurrences that are of sufficient magnitude to elicit change.

Distress is a negative emotional response that arises when people perceive the demands or problems (stressors) placed upon them to outweigh their perceived resources (e.g., social support, information) available to cope with the demands. Therefore, stress is an interaction between individuals' perceptions of the demands placed upon them and the perception of available resources (Figure 1). In other words, "the potential to feel stress exists when a person perceives that environmental demands threaten the individual's capabilities and resources for meeting those demands" (Hanson, 1993, p. 105). A popular theory of the stress process developed by Lazarus and Folkman (1984), the Cognitive Theory of Stress and Coping, stated that stress is experienced when demands from the environment exceed a person's resources. Basically, distress results when people have difficulty coping with stressors. Lazarus and Folkman's conceptualization influenced the current model of the stress process. This conceptualization includes both demand and resource variables unlike the Conservation of Resources (COR) theory.

Figure 1

The Stress Appraisal Process: Relationship of Demands and Resources to Psychological Distress



The COR theory (Hobfoll, 1993) highlights the importance of resources. COR theory states that it is the comparable gain and loss of resources that is important in determining who becomes distressed. Resource loss is disproportionately weighted compared to resource gain; that is, a lack of resources contributes to ongoing resource loss and increases that likelihood that someone will become distressed. Resource loss has been significantly related to distress (Hobfoll).

The current study takes the position that while resources are infinitely important in predicting distress, so too are demands. It is likely that both demands and resources are strongly associated with distress. Further, a person's appraisal of the balance between demands and resources is key for determining whether they will experience distress. For example, if one were to lose some of their resources at a time when they perceive little or no demands it would not cause as much distress as if they were experiencing numerous important demands. Clearly it is important to understand the process of appraising a situation as stressful.

### Stress Appraisal Process

Appraisal processes are used by individuals to determine the meaning of the events they experience. Researchers distinguish between two types of appraisal. Primary appraisal refers to the initial meaning that a person attributes to a situation. This initial meaning is effected by individuals judgements regarding the degree of threat that an event represents to their fundamental beliefs and values. Secondary appraisal is the evaluation of an event in terms of the possible outcomes and the possibilities for coping (Park & Folkman, 1997).

Primary appraisal is the evaluation of an event or situation influenced by an individual's global meaning. Global meaning, according to Park and Folkman (1997),

refers to one's beliefs concerning the world (e.g., belief in a "just world"), the self (e.g., self worth and perceived control over personal destiny), and the relationship of the self to the world. Within the family system, global meaning concerns an individual's stable set of beliefs regarding the relationships of family members to each other and the relationship of the family to the greater community (Patterson, 1993). Primary appraisal is the initial search for and appraisal of meaning regarding an event. Primary appraisals are influenced by the extent to which an individual believes that his or her values and goals are violated by an event (Park & Folkman, 1997). If an event is appraised as being at odds with a person's global meaning, distress will likely result.

Secondary appraisal is the meaning that is formed by appraising the interaction between primary appraisal and resources believed to be available. The more resources people believe they have to deal with a potentially stressful event, the less distress they will experience (Lazarus & Folkman, 1984). People with more positive attitudes may perceive that they have many resources (e.g., social support from friends and family members or access to other forms of help) and, therefore, will appraise the situation as less distressing. Basically, primary and secondary appraisal involve individuals' separate assessments of the demands placed upon them and the resources available to them.

These two appraisals, primary and secondary, then lead to a situational appraisal of an event (Park & Folkman, 1997). Situational meaning is formed through the interaction of primary and secondary appraisals and the actual event that occurred. Situational meaning is a reflection of the event in terms of the degree of personal significance it has for the individual. If the situational meaning derived is congruent with a person's global meaning (i.e., is consistent with a person's values, goals, and view of the greater world), the event

will be appraised as not distressing. Distress results when the initial appraisal process (primary and secondary appraisal) and the appraised situational meaning are at odds with a person's global meaning. For example, distress will result when a person believes his or her goals or values are being violated, perceives that he or she does not have the resources (e.g., self-esteem, social support, and coping strategies) to deal with the problem, and the problem is appraised as being important. When the problem is personally significant, more weight is placed upon the event. For example, if an individual's sibling became ill, it would probably be more significant to him or her than if it had been an acquaintance. If the personally significant event is perceived as a demand, the potential for feeling distress arises, unless resources are perceived to be available. Therefore, the perceived balance of demands and resources will determine whether distress results. If there is a large imbalance in the direction of demands, experiencing distress is likely.

The appraisal patterns people utilize are dependent upon their prior knowledge and experience with events that are relevant to the current one. The meaning a person derives from an event is subject to re-interpretation and, therefore, is constantly changing (Fife, 1995; Park & Folkman, 1997). The meaning a person attaches to an event changes as the person copes. This is a cyclical process in which the demands (stressors) and resources (e.g., self-esteem, social support, and coping strategies) are often re-evaluated. Fife (1995) suggests that the meaning given to an event affects (a) whether the situation is perceived as distressing, (b) the coping strategies utilized, and (c) psychological well-being.

The meaning people attach to an event depends to an extent on the severity of demands they are experiencing on an ongoing basis, as well as the problem at hand, and on the resources to which they perceive themselves to have access. The concept of demands



will be discussed next, after which resources (i.e., self-esteem, social support, and coping strategies) will be reviewed.

### Risk Factors for Distress

Risk factors for developing distress are the perceived demands that people face. The terms demands and stressors are used interchangeably. Distress may occur when a person is exposed to a number of discrete and difficult stressors that keep changing, or when a person is exposed to continuously difficult stressors that do not change (Wheaton, 1994). The former refers to distress occurring in response to traumas and major life changing events. Traumas refer to horrifying and disturbing experiences that appear suddenly and that may be relatively short-lived, such as natural disasters, rape, witnessing violence, and war combat. Major life events refer to discrete problems that have a sudden and clearly defined onset, are relatively short-term, and have a definite resolution, such as starting university, a wedding, or a divorce.

Continuously difficult demands involve chronic distress that occurs in response to ongoing stressors (Wheaton, 1994). This type of distress is often referred to as strain. Chronic stressors, unlike life events, develop gradually over a period of time, are relatively long-term in nature, and are often resolved unpredictably (i.e., suddenly and without planning), if they can be removed at all. Chronic stressors are often due to a lack of resources and/or external circumstances that the person cannot control. Chronic stressors are ongoing difficulties, such as a chronic health problem or an increase in a partner's drinking over time.

These types of stressors -- traumas, life events, and chronic stressors -- lie along a continuum from the most discrete (i.e., traumas) to the most continuous (i.e., chronic;

Wheaton, 1994). Daily hassles that people encounter in everyday life often are reoccurring in nature and lie in the middle of the continuum. Daily hassles are often not one-time events, they tend to re-occur but are not as continuous as chronic stressors. Life events, on the other hand, are one-time events (e.g., entering university) that are fairly short-term.

### Daily Hassles

The effects of daily hassles are often overlooked in the stress literature. Daily hassles are defined as "the irritating, frustrating, distressing demands that to some degree characterize everyday transactions with the environment" (Kanner, Coyne, Schaefer, & Lazarus, 1981, p. 3). Thus, daily hassles are minor, ongoing stressors that involve daily life, such as losing items, having arguments, thoughts about the future, social obligations, and so on. Daily hassles are an important source of distress for adults. Research indicates that daily hassles are better predictors of psychological and somatic distress than major life events (Blankstein & Flett, 1992; Chamberlain & Zika, 1990; Compas, 1987; Compas, Davis, Forsythe, & Wagner, 1987; DeLongis, Coyne, Dakof, Folkman, & Lazarus, 1982). Daily hassles have been associated with specific types of distress, such as depression and anxiety, in a variety of age groups (e.g., college students, mothers, elderly persons: Blankstein & Flett, 1992; Compas, Slavin, Wagner, & Vannatta, 1986; Scott & Melin, 1998). Therefore, it is important to investigate daily hassles as a component of the stress process.

It is important to note that daily hassles tend to remain fairly stable over time (Chamberlain & Zika, 1990). This could be due to repeated stressors in the environment or due to the individual's special vulnerabilities to situations. Further, the level of daily hassles has been related to the level of distress. Blankstein and Flett (1992) found that

higher levels of hassles were associated with higher levels of depression and anxiety. Daily hassles may be modified through prevention or therapeutic interventions. For example, some daily hassles may be due to the ineffectiveness of managing one's time and daily routine. In this case, hassles may be reduced by engaging in therapeutic programs, such as time-management.

Daily hassles are not the same for everyone. Different groups of people will report different types of hassles. For example, mothers of young children will report different daily hassles than college students. Daily hassles reported by college students include concerns about high standards, wasting time, concerns about failing a course, and troubling thoughts about the future (Blankstein & Flett, 1992; Chamberlain & Zika, 1990). In contrast, mothers report concerns about rising prices, planning meals, preparing meals, not getting enough sleep, home maintenance, and physical appearance (Chamberlain & Zika). Many items on daily hassles scales are not relevant to certain groups of persons. Although daily hassles is a relatively good predictor of distress it is likely that stressors related to one's family are also important. Since the sibling relationship is so enduring, it is possible that stressors associated with the relationship may effect distress. The sibling relationship, in particular sibling conflict, will be discussed next.

### Sibling Conflict

The characterization of the typical sibling relationship is an extremely important area of research. Siblings have a long-lasting effect on one another beginning in childhood. The social behaviours developed with siblings in childhood may generalize and persist through adulthood. Sibling relationships may range from conflictual to harmonious at different times in their lives. Most sibling relationships are characterized by some conflicting

interactions, although neutral and positive (e.g., sharing, caring) behaviours are used more often in interactions than negative behaviours (Brody & Stoneman, 1990). Unfortunately, "conflict among siblings is one of the most common and persistent problems facing families" (Newman, 1994, p. 125). Conflicts, in general, are social events that involve opposition and disagreement between two or more persons (Vandell & Bailey, 1992). Sibling conflict is defined as a mutual opposition in which both siblings are in opposition to the other (Vandell & Bailey). Therefore, the definition calls for agreement from the siblings that they are in conflict; that is they both oppose, object, or protest.

Sibling relationships during childhood are characterized by conflict and rivalry for parental attention and affection (Stocker, Lanthier, & Furman, 1997). Most sibling research has focused on childhood and early adolescent relationships. Therefore, it has been unclear whether conflict and rivalry continue into adulthood (Brody & Stoneman, 1990). Personal experiences would lead us to believe that conflict and rivalry does persist into adulthood, although it may be less pronounced. Sibling conflict may arise from a variety of sources such as, but not limited to, competition, rivalry associated with parental attention and affection, social comparisons, differences in values and opinions, overstepping territorial boundaries (e.g., using the others material possessions), teasing, and aggression. The degree of sibling conflict may be associated with distress.

Sibling conflict during childhood has been reported to arise from struggles over objects, and from verbal (e.g., teasing, threatening) and physical (e.g., pushing and hitting) taunts. Although sibling conflict, including violence, is fairly common, it does not dominate childhood sibling interactions. Positive behaviours tend to occur much more frequently than conflictual behaviours (Newman, 1994). It is also clear that the nature and

amount of sibling conflict changes over time. Some studies indicate that overt conflict decreases with age (Brody & Stoneman, 1990). Two studies in particular have investigated conflict in adult sibling relationships (Ross & Milgram, 1982; Stocker et al., 1997).

Ross and Milgram (1982) investigated three concepts they believed would have the greatest impact within adult sibling relationships (aged 22 - 93 years): sibling rivalry, perceived closeness, and critical incidents. Siblings participated in taped group discussions. The sessions explored "participants' sense of closeness to their siblings, feelings of rivalry and perceptions of favoritism, critical incidents and their consequences, and changes of feelings and perceptions over time" (p. 226).

Ross and Milgram found that experiences in childhood affected rivalry and feelings of closeness in adulthood. Most siblings (71%) reported rivalrous feelings toward another sibling. Commonly, rivalry was perceived as being initiated by parents or other adults within the household. This involves siblings' perceptions that one or both parents preferred the other sibling over themselves. Rivalry may also be generated by one of the siblings. Most frequently, sibling-generated rivalry is perceived as initiated by a brother. Rivalry is perceived as initiated by a sister less frequently and by oneself very infrequently (Ross & Milgram). Rivalry in childhood consists of vying for power and recognition between siblings and vying for parents' attention, recognition, approval, and love. Siblings compare themselves to each other on a variety of dimensions and often without the other sibling being aware of rivalrous feelings. The intensity of sibling rivalry lies on a continuum. Sibling rivalry can often lead to conflict and is thought to be most intense while siblings live together in the family home.

Although siblings often experience feelings of rivalry, they may still develop close relationships. "Experiences shared with particular siblings while siblings still lived at home -- study, work, recreational activities, events arising out of common or complementary interests -- were the most often cited instances originating feelings of closeness" (Ross & Milgram, 1982, p. 228). In adolescence, shared personal values, interests, and activities contributed to feelings of closeness. Feelings of closeness were enhanced if siblings shared close proximity. Through childhood and adolescent interactions, close personal relationships were developed between siblings. It was very rare that participants reported closeness as originating in adulthood (Ross & Milgram). Leaving the family home was regarded as loosening ties and reducing closeness between siblings.

Critical incidents, such as moving away from home, are specific events that bring about change in sibling relationships. Ross and Milgram (1982) were able to classify events into two categories: normative and idiosyncratic events. Normative events are events expected to occur at certain stages of life (e.g., moving out, marriage, and death of parents in later life). Normative events may occur at the expected time or may occur at times that are not expected (e.g., death of a sibling in young adulthood). Idiosyncratic events are events which are not expected (e.g., aiding siblings, value differences, sibling competition, divorce, car accidents). Aiding siblings when they needed help was often thought to enhance closeness unless money was involved and not paid back on a timely basis. It is clear from these findings that physical proximity plays an important role in both feelings of closeness and conflicting interactions. Most siblings maintain contact in some form after leaving the family home, therefore the present study included both siblings living together or apart.

Stocker et al. (1997) conducted a study in which they sought to describe the nature of sibling relationships in young adulthood. College students from two locations, Colorado and Indiana, were asked to participate in the study. Similar to Ross and Milgram's (1982) findings, these researchers found that sibling relationships were characterized by warmth, conflict, and rivalry. Rivalry and conflict continued to be important characteristics of the sibling relationship, even when siblings lived apart from one another and had the ability to determine the amount of contact to have with one another. Siblings reported having periodic conflicts and feelings of rivalry over parental attention even though few participants lived with their parents. Perceptions of rivalry and conflict were modestly statistically related ( $r = .23$ ) and were lower than what has been reported in childhood. This suggests that concerns over parental attention and affection decrease with age and are not the primary basis of conflict among adult siblings.

Stocker et al. (1997) also investigated the association of family structure variables and psychological functioning. Higher ratings of conflict were moderately associated with siblings who were closer in age, the same gender, and members of a large family. In terms of proximity, the amount of contact with a sibling was "positively correlated with perceptions of warmth and negatively correlated with rivalry" (Stocker et al., 1997, p. 218). It is possible that siblings who have a warm and caring relationship choose to maintain more contact with each other, whereas those with conflictual or rivalrous relationships may choose to maintain little contact. Siblings who had higher scores on psychological functioning, indicating less psychological distress, reported lower levels of conflict in their relationship. This finding could be due to two factors. First, siblings with lower psychological functioning may perceive that their relationship is conflictual or may

behave in a way that leads to more conflicts. Second, it is possible that “conflictual sibling relationships can contribute to poor psychological functioning if they raise individuals’ stress levels” (Stocker et al., p. 218).

Conflictual sibling interactions have been related to psychological distress (Graham-Bermann & Cutler, 1994). Graham-Bermann, Cutler, Litzenberger, and Schwartz (1994) found that 28% of their college-aged sample rated the amount of conflict with their siblings as higher than in other families they knew. Those individuals that reported higher levels of sibling conflict experienced greater levels of anxiety and depression, as well as lower self-esteem, than individuals that reported lower levels of sibling conflict.

It is important to remember that many people remain healthy despite being exposed to stressors. People may respond positively to stressors. For example, negative emotional states associated with stressors may motivate people to search for and create positive emotional states in order to gain relief from distress (Folkman, 1997). Attributing positive meaning to events is a coping strategy that can provide respite and restore resources such as social support and self-esteem.

The perceived demands -- daily hassles and sibling conflict -- have both been associated with distress. It is important to remember that the stress process involves more than the perception of demands. There are many factors that effect the stress process. Some of these factors may moderate the impact of stressors on psychological health (Avison & Gotlib, 1994). The perceived demands/stressors and available resources, including self-esteem, social support, and approach coping strategies, are all critical factors that effect the appraisal of a situation as stressful and psychological outcomes such as distress.



## Protective Factors Against Distress

### Self-esteem

Self-esteem has been defined as the "evaluation which the individual makes and customarily maintains with regard to himself or herself and it expresses an attitude of approval or disapproval toward oneself" (Rosenberg, 1965 as cited in Turner & Roszell, 1994, p. 190). The formation of self-esteem involves individuals' interpretations of how others view them, how individuals judge themselves compared to others, and the conclusions that individuals draw about themselves from observing the success or failure of their own actions (Turner & Roszell). A positive and resilient level of self-esteem is a crucial resource for combating negative implications of stressful events.

Self-esteem has been linked to the stress process. Self-esteem may moderate the level of distress perceived (higher self-esteem is associated with less feelings of distress) and the consequences of stressful experiences. A higher level of self-esteem at the onset of a stressor is an important resource for people in dealing with the event. It is believed that high levels of self-esteem may protect individuals from becoming distressed (Wagner & Compas, 1990). For example, they may believe that they can overcome the problem based on their high feelings of self-esteem and previous successful resolution of similar situations. Conversely, the outcome of stressful experiences may affect self-esteem. The positive outcome of a stressful situation may bolster self-esteem, whereas negative outcomes may lower feelings of self-esteem. Low self-esteem constitutes a vulnerability that increases the risk of negative psychological outcomes (e.g., depression) in the presence of a stressful event (Turner & Roszell, 1994). Therefore, self-esteem plays an important role, contributing to the experience of stress and later to the psychological

consequence (i.e., distress) of stressful situations. The experience of being supported by others (social support) contributes toward more stable and positive self-esteem; therefore, social support and self-esteem are invariably linked.

### Social Support

Social support, once considered a type of coping strategy, is now considered to be an important factor in the stress process. Social support refers to individuals' evaluations and perceptions of support that lead them to believe that they are loved, wanted, valued, and able to count on others should the need arise (Sarason, Pierce, & Sarason, 1994). It is the perception of support that is most important in the definition.

One way of conceptualizing social support is to look at the distinction between the structure and function of social support. Previously, researchers had taken a structural approach to social support. This approach focused on the structure of networks, where certain networks were associated with positive outcomes while others were associated with negative outcomes (Sarason et al., 1994). The structural approach postulated that it was the amount (i.e., the actual number) of people within an individual's network that defined social support. This concept of embeddedness within a social network is relevant here. The more that someone is embedded within a social network, the more chances they have for obtaining social support. Embeddedness is a quantitative measure that refers to the number of people within someone's network and the potential availability of social support. Embeddedness, although a necessary condition, is not sufficient in itself. Numbers alone will not guarantee that a person will receive social support.

The functional approach specified aspects of social support that were believed to be beneficial to individuals experiencing distress (Sarason et al., 1994). The aspects of social

support found to be beneficial were: attachment to others, social integration, opportunity for nurturance, reassurance of self-worth from others, sense of reliable alliances with others, and guidance (Sarason et. al). Social support was postulated to buffer a person from the effects of distress by insulating individuals who were vulnerable to stress. This buffer is a function of the match between the need brought on by a stressor and the type of support received. If the type of support does not match the need brought on by the stressor, the individual does not receive the benefit of the buffering effects. For example, an individual going through a break-up with a significant other may need emotional support and reassurance from others, but instead is offered money. In this case, the individual will not feel satisfied with the social support because his or her need did not match the support given.

Many researchers suggest that social support may act as a protective factor: that is, higher levels of social support may buffer an individual from experiencing distress. Under conditions of high demands and low social support, psychological distress has been found to be significantly higher (Compas et al., 1986). It is important to distinguish between the perception of satisfaction of support (i.e., satisfaction) and the perception of available support (i.e., number of persons an individual believes can be relied upon for support). Social support refers to both the support that individuals currently receive and to the support that individuals perceive to be available. Perceptions of both actual support and availability of support have generally been associated with psychological well-being (Sarason, et al., 1994). Also, evidence suggests that individuals' perceptions of available support is more important than the actual number of interpersonal contacts a person has

(i.e., embeddedness). It is important to assess both the perceptions of satisfaction and availability of support.

Positive psychological well-being has been associated with the perception of more support (whether received or perceived to be available). The perception of support received from others often does not match the support that the others believe they are supplying. For example, providers may believe that they are offering support, but recipients may not perceive that support is being provided to them. Another possibility is that the person may not perceive that the support provided is adequate for what he or she needs. Therefore, the recipient's appraisals of support are an important factor determining whether an individual feels the effects of social support.

The perceived availability of support takes into consideration the subjective element of support. It has been found that it is the perception of available support that is most closely related to positive psychological health outcomes (Sarason et al., 1994). Whether an individual feels supported is a function of: (a) the extent to which a person believes that others care for and value them and (b) the extent to which a person feels that members of their social network are available when they need them. If a person has a close and caring relationship, he or she will believe that the other person involved in the relationship can be counted on for support or assistance when he or she needs support. Support may include emotional support, material aid, behavioural assistance, guidance through information or advice, intimate interaction (i.e., caring or sharing), social feedback (i.e., reality checking), or positive social interaction. People who rate themselves high on perceived availability of support believe that they are accepted and liked by others (Sarason et. al.).

In summary, social support helps a person by buffering the stressful aspects of a situation and helps a person to deal with and overcome the emotional distress brought on by stressors. The most important aspects of social support are the perceptions of available and adequate support by the recipient, not the number of people within an individual's network (although a minimum amount of embeddedness is needed). Social support has been inversely related to psychological disorders (Compas et al., 1986). The presence of perceived social support has been found to both moderate the appraisal of stress and the consequences of stress, such as distress (Sarason et. al., 1994). Social support has been associated with mental and physical health, speedier recovery from illness, and the likelihood of remaining healthy when faced with stressors (Holahan & Moos, 1994). Positive outcomes linked to social support are feelings of acceptance from others, low feelings of anxiety, and high self-esteem. Social resources (i.e., social support) may provide emotional support to an individual that bolsters feelings of self-esteem. Therefore, it is important to investigate the effects of personal variables (self-esteem) as well as social variables (social support).

The factors discussed thus far (demands, self-esteem, and social support) have all been found to effect the appraisal of a situation as stressful, as well as to contribute to the overall psychological consequence of the stressful experience. Another important resource for people is the coping strategies that they use to mediate the amount of distress they feel. Therefore, coping will be discussed at length.

### Coping

Historical Conceptualizations of Coping. The concept of coping originated from two different theoretical realms, one emphasizing behaviour and the other emphasizing

cognition. The former realm refers to the animal model of stress and control, which defines coping as learned behavioural acts (e.g., avoidance and escape behaviours) that lower psycho-physiological disturbance by controlling aversive environmental conditions (Lazarus & Folkman, 1984). This model is very simplistic and cannot account for the full range of human coping. The latter theoretical realm refers to the psychoanalytic model, in which coping is defined as "realistic and flexible thoughts and acts that solve problems and thereby reduce stress" (Lazarus & Folkman, 1984, p. 118). Coping, according to the psychoanalytic framework, involves the "use of defensive ego-processes to resolve conflicts between the demands of the external world and individual sexual and aggressive impulses" (Sztaba, 1994, p. 33). The cognitive ego-processes distort reality and reduce tension. The psychoanalytic model differentiates between different hierarchical ego-processes (i.e., ego-processes are ranked according to their adaptability) that are used to manage stress in the environment (Lazarus, 1993). This model views coping as a stable trait or style rather than a dynamic ego-process. Traits are regarded as "properties of persons that dispose them to react in certain ways in given classes of situations" (Lazarus & Folkman, p. 121). Coping traits are considered to be consistent over time and across diverse situations.

Current Conceptualizations of Coping. Lazarus and Folkman (1984) believe that trait conceptualizations of coping "underestimate the complexity and variability of actual coping efforts" (p. 129). They state that coping is a complex amalgam of thoughts and behaviours involving multidimensional qualities that cannot be explained by the unidimensionality of most trait conceptualizations of coping. Therefore, Lazarus and Folkman assigned coping a dynamic definition. They defined coping as "constantly

changing cognitive and behavioural efforts to manage specific external and/or internal demands that are appraised as taxing or exceeding the resources of the person” (p. 141). In other words, Lazarus and Folkman view coping as a process. According to Lazarus, “coping changes over time in accordance with the situational contexts in which it occurs” (Lazarus, 1993, p. 235). Not only does the coping strategy that a person uses depend on the context, but the context in which a problem occurs and the problem itself may change over time. Therefore, when studying coping in sibling relationships, “it is necessary to specify the particular threats of immediate concern . . . and to treat them separately rather than broadening the focus of attention to the overall” relationship (Lazarus, p. 236). In Lazarus and Folkman’s model (1984; Lazarus, 1993), coping is not equated with the psychological consequence of the coping strategy used. Therefore, coping function (i.e., the purpose the strategy serves) and coping outcome or consequence (i.e., the effect a strategy has) should be considered separately. What works for one person in one situation may not work in another situation or for another person in the same situation.

According to Lazarus and Folkman (1984), there are two major foci and functions of coping. Problem-focused coping functions to control distress by directly changing the person-environment relationship and acting on the problem (Lazarus & Folkman; Knapp, Stark, Kurkjian, & Spirito, 1991). Emotion-focused coping, on the other hand, functions to control distress by changing the meaning of the problem or by changing the way the problem is attended to, even though the problem itself has not changed.

Similar to Lazarus and Folkman’s (1984) conceptualization of coping, Moos and Billings (1982) used three domains to classify coping responses: appraisal-focused, problem-focused, and emotion-focused. Appraisal-focused coping functions by using

logical analysis, cognitive redefinition, or cognitive avoidance to define the meaning of an event. Problem-focused coping may be directed at changing the environment (e.g., seeking information or guidance, taking direct action) and/or changing one's own behaviour (e.g., level of goals or expectations, seeking alternative rewards). Primarily, problem-focused coping is aimed at problem solving or doing something to directly alter the level of stress. A person is most likely to use a problem-focused coping strategy when the person defines the problem as solvable and within his or her control. If the individual believes that he or she can have a direct effect on the problem and have the ability to change the circumstances, he or she will directly act on the problem. For example, a person having difficulties with school work, who believes he or she can learn the material, may ask for extra help from the teacher or hire a tutor. On the other hand, a student who believes that he or she will not be able to do any better no matter how much he or she studies, will not work toward learning the material. Instead, this student may work on controlling his or her emotional distress associated with doing poorly in the class.

Emotion-focused coping strategies are used to control the emotional distress associated with a problem. Emotion-focused coping may be cognitive in nature (i.e., minimizing the problem, blaming others, projection, fantasizing, or detaching oneself from the problem) or behavioural in nature (i.e., substance use, meditating, or exercising to get one's mind off the problem). A person is most likely to use emotion-focused coping strategies when the problem is perceived as unsolvable and uncontrollable. This may involve insufficient resources and/or relevant skills and experiences to deal with the problem.



Moos (1988) modified the above conceptualization because research indicated that a more complex classification system was needed. His new, descriptive classification system distinguishes between two types of coping responses: avoidance and approach coping responses. When Moos talks about behavioural coping strategies he is referring to what the person actually does in response to a problem, not the purpose or function that the strategy serves. In Moos' conceptualization, a person may avoid the problem in an effort to manage the emotional distress associated with the problem (avoidance coping).

Avoidance coping strategies include two cognitive strategies (i.e., cognitive avoidance, and acceptance or resignation) and two behavioural strategies (i.e., seeking alternative rewards and emotional discharge). Avoidance strategies basically bottle up feelings or try to avoid the feelings that are attached to the problem. Cognitive avoidance refers to avoiding thinking about the problem or the feelings associated with it. Another cognitive strategy, acceptance or resignation, refers to accepting the problem for what it is and not trying to find a solution for the problem. The person is resigned that the problem is not within his or her control (even if it may be). Behavioural avoidance coping strategies include looking for alternative physical places where one will not feel so stressed. In other words, a person may escape the situation. For example, a brother's bizarre behaviour at a family function creates stress for the sibling, so the sibling leaves the function to go play volleyball at the beach, which is something he enjoys. However, when avoidance is not possible and bottled up feelings reach a boiling point, emotional discharge may result. A person will let out all of his or her feelings in a catharsis of sorts (e.g., yelling or punching a wall). This letting off steam does not directly deal with the problem but does serve to release tension.

In contrast to avoidance coping, a person may want to approach and begin solving the problem (approach coping). Approach coping strategies also include two cognitive strategies (i.e., logical analysis and positive reappraisal) and two behavioural strategies (i.e., seeking support/information and taking problem-solving action). Logical analysis refers to analyzing the situation from an intellectual point of view, not an emotional one. Positive re-appraisal refers to defining or re-defining the problem as positive and something that can be dealt with. A behavioural type of approach coping often used is information seeking. For example, Main, Gerace, and Camilleri (1993) found that siblings often took it upon themselves to obtain and read information about a mental disorder from which their sibling suffered. Another behavioural type of approach coping is to take direct action to alter the problem (i.e., problem-solving action), such as ensuring that a sibling takes medication for an illness daily. Problem-focused coping strategies may follow a certain pattern of action: (a) defining and re-defining the problem, (b) generating alternative solutions, (c) weighing the costs and benefits of the alternatives, (d) choosing an alternative, and (e) acting on the problem (Thorlakson, 1998).

The coping strategies utilized by a person usually effect psychological distress. The use of approach strategies have been shown to moderate the potential adverse influence of stressors on psychological health (Holahan & Moos, 1994). Generally, approach coping strategies are associated with less psychological distress. When approach coping strategies are associated with distress, it is mainly due to the person not having the resources needed to apply them effectively. Therefore, approach coping strategies may not always be useful.

Avoidance coping strategies have been associated with psychological distress more frequently than approach coping strategies. However, avoidance coping strategies may be

useful for decreasing distress in the short term or for problems that cannot be solved through approach coping. Therefore, neither the use of avoidance or approach coping strategies will always be related to distress. Recently, Sweet, Savoie, and Lemyre (1999) found that approach coping was not associated with reduced amounts of distress in their sample of breast screening patients. They postulated that when the stressor is perceived as uncontrollable, approach coping strategies are less likely to be adaptive. The outcome will greatly depend on the type of situation, the appraisal of the situation, and the other factors of the stress process. Never-the-less, the research literature shows that approach coping strategies are mainly related to less distress, whereas avoidance coping strategies are mainly related to more distress. When coping strategies are effective, the person-environment relationship is improved, leading to a better person-environment fit and a positive emotional response.

### The Present Study

The present study investigated the extent to which selected risk factors (i.e., sibling-related conflict and daily life hassles) and protective factors (i.e., self-esteem, social support, and approach coping) contribute to distress. Participants completed a self-report questionnaire assessing the independent variables and the dependent variable distress (i.e., psychological and somatic distress). The independent variables of interest were: (a) Sibling Conflict, (b) Daily Hassles, (c) Self-esteem, (d) Social Support, and (e) Approach coping. Distress was defined as both Psychological (i.e., mood states) and Somatic complaints. These distress complaints were measured separately.

This study begins to test some of the theoretical relationships of the transactional model of the stress process. The relationship between each of the five independent

variables and the two types of distress was examined, separately and in combination. It was expected that the risk factors would both be directly related to experiencing more distress. That is, higher levels of sibling conflict and daily hassles would be directly related to higher levels of distress. It was also expected that higher levels of sibling conflict, in combination with higher levels of daily hassles, would be associated with higher levels of distress than either one alone. On the other hand, it was expected that there would be inverse relationships between protective factors and distress. That is, higher levels of self-esteem, social support, and approach coping would each be inversely related to higher levels of distress. It was also expected that higher levels of the resource variables in combination with each other would be associated with lower levels of distress than either one alone.

### Hypotheses

1. Higher levels of sibling conflict are directly related to higher levels of distress.
2. Higher levels of daily hassles are directly related to higher levels of distress.
3. Higher levels of sibling conflict, combined with higher levels of daily hassles, will be more directly related to higher levels of distress than either factor alone.
4. Higher levels of self-esteem are inversely related to higher levels of distress.
5. Higher levels of social support are inversely related to higher levels of distress.
6. Higher levels of approach coping are inversely related to higher levels of distress.
7. Higher levels of self-esteem, combined with higher levels of social support and approach coping, will be more directly related to lower levels of distress than any of the variables alone.

## Method

### Participants

Participants were recruited from introductory psychology classes at the University of Manitoba. During recruitment, the study was described as a "study of sibling relationships and interactions." Participation was restricted to persons having a sibling between the ages of 15 and 25 years to participate. The sibling ages of 15 to 25 were chosen because previous studies that required participants to report on adult siblings (aged 17 years or older) found an imbalance in reporting; that is, a significant proportion of participants reported about a relationship with an older sibling (Stocker, Lanthier, & Furman, 1997). Having a lower age limit (15 years) allows participants to report on a younger sibling.

In total, 410 participants were recruited for the study. Of these, 19 questionnaires were discarded due to entirely incomplete measures. Of the remaining 391 (mean age = 19.4,  $SD = 3.15$ ), there were 251 females (mean age = 19.38,  $SD = 3.38$ ) and 140 males (mean age = 19.44,  $SD = 2.72$ ). Most participants reported on a biological sibling and were firstborn children. Two hundred and four participants reported on an older sibling, 173 reported on a younger sibling, 11 reported on a sibling the same age, and 3 did not report their sibling's age. Students received three credits towards their grade in Introduction to Psychology for participating in the study.

### Materials

#### The Adult Sibling Relationship Questionnaire

Sibling Conflict was measured using a recently published self-report questionnaire developed by Stocker and colleagues (1997). The Adult Sibling Relationship Questionnaire (ASRQ) focuses on adult (aged 17 years and older) siblings' perceptions of

the sibling relationship (Appendix A). The ASRQ is an adult extension of the Sibling Relationship Questionnaire (Furman & Buhrmester, 1985). Participants report on one particular sibling relationship. Specifically, the ASRQ asks the respondents' perceptions of their own and their sibling's behaviours and feelings toward each other. The ASRQ consists of 81 items grouped into 14 primary scales: (a) intimacy, (b) affection, (c) knowledge, (d) acceptance, (e) similarity, (f) admiration, (g) emotional support, (h) instrumental support, (i) dominance, (j) competition, (k) antagonism, (l) quarrelling, (m) maternal rivalry, and (n) paternal rivalry. The items on the 14 primary scales are combined to form 3 higher-order factors: (a) Warmth, (b) Conflict, and (c) Rivalry.

Stocker et al. (1997) found that there were three underlying factors: (a) Warmth, (b) Conflict, and (c) Rivalry. The first factor, Warmth, includes eight primary scales, namely intimacy, admiration, affection, acceptance, similarity, knowledge of the sibling, emotional support, and instrumental support scales. The second factor, Conflict, consists of four primary scales, including the quarrelling, dominance, antagonism, and competition scales. The third factor, Rivalry, consists of the maternal and paternal rivalry primary scales. The primary scales load moderately to highly on their respective factors. The factor scores are minimally correlated with each other: Warmth and Conflict,  $r = -0.17$ ; Warmth and Rivalry,  $r = -0.17$ ; and Conflict and Rivalry,  $r = 0.23$  (all  $ps < .05$ ; Stocker et al., 1997).

The Warmth and Conflict items are rated on how characteristic each item is of the sibling relationship using a Likert scale ranging from hardly at all (1) to extremely much (5). Mean scores are obtained for the Warmth and Conflict scales. The responses to the relevant items for each are added and then divided by the number of items in the factor to obtain a mean score. The Rivalry items are rated on a 5-point Likert scale ranging from

participant is usually favored (1) to sibling is usually favored (5). The rivalry scales (maternal and paternal) are scored as the absolute value of deviations from the mid-point of the scale. Therefore, scores for the rivalry scales range from 0-2, with 0 indicating absence of rivalry and a 2 indicating intense rivalry. The total for the Rivalry scale is obtained by adding the absolute values and dividing by the number of items on the scale to obtain a mean score.

Scale and factor scores have been demonstrated to have high levels of internal consistency, test-retest reliability, and low correlations with measures of socially desirable responding (Stocker et al., 1997). Internal consistency estimates ranged from 0.74 to 0.92. The primary scale with the lowest internal consistency estimate was the Dominance scale, whereas the scale with the highest internal consistency was the Antagonism scale. These two scales also had the lowest and highest test-retest reliabilities, respectively. Test-retest reliability over two weeks ranged from 0.75 to 0.93. Only two of the scales (Competition  $r = -0.21$  and Dominance  $r = -0.14$ ) were significantly correlated with social desirability, although the magnitude of these correlations was low (mean  $r = -0.17$ ).

#### Brief College Hassles Scale

The Brief College Hassles Scale (BCHS), based on the Hassles Scale developed by Kanner et al. (1981), is a short 20-item measure of hassles experienced by college students (Blankstein & Flett, 1992; Appendix B). The items on the BCHS include five of the six items reported by the original developers of the Hassles Scale (Kanner, Coyne, Schaefer, & Lazarus, 1981) to be most frequently associated with university students. The BCHS includes a variety of everyday hassles related to school, social activities, family finances, and so on. Examples of items on the questionnaire are: "Troubling thoughts about your

future,” “Concerns about meeting high standards,” and “Concerns about failing a course” (Blankstein & Flett). Participants are asked to assess the items based on their occurrence during the preceding month and their severity. The items are rated on a four-point Likert scale from Did not happen, not at all severe (1) to Occurred during the preceding month, extremely severe (7), with higher scores reflecting greater severity of hassles. Participants are instructed not to provide a severity rating greater than zero if the item was not experienced during the past month.

The BCHS has been shown to be a reliable measure of daily hassles experienced by college students. Reliability analyses of the scale reveal that the scale is internally consistent ( $\alpha=0.89$ ). Items for the BCHS were chosen from the Hassles Scale which has been proven to have good reliability: Alphas range between 0.80 and 0.93 for eight factors of the original Hassles Scale (Evans & Nies, 1997).

#### The Coopersmith Self-esteem Inventory

The Coopersmith Self-Esteem Inventory (SEI), developed by Coopersmith (1989), is comprised of 25 items measuring both positive and negative feelings or attitudes about oneself (Appendix C). Respondents indicate whether the statements describe how they usually feel. There are two possible response categories, Like Me (0) or Unlike Me (1). Items that reflect positive self-esteem are scored in reverse. The higher the total score on the scale, the poorer (or lower) the self-esteem. A score is derived by multiplying the raw score by four. This yields a range of scores from totally negative self-esteem (i.e., score of zero) to totally positive self-esteem (i.e., score of 100). The scale has good internal consistency (Cronbach's  $\alpha = .92$ ; Coopersmith) Correlations with other self-esteem scales indicate good reliability and validity.



### Social Support Questionnaire

The six-item Social Support Questionnaire (SSQ), developed by Sarason, Sarason, Shearin, and Pierce (1987), assesses two important parts of social support for every item: (a) availability of support and (b) satisfaction of support (Appendix D). In the first part of each item, individuals are asked to identify persons that they believe are available and that they can turn to when they are in need (the Number or Perceived Availability score). Participants are instructed to list all of the people they know who they can count on for help or support in the manner described. They list the person's initials and their relationship to them (e.g., brother, friend, employer). If participants believe that no one is available to support them they place a check beside "no one." This part of the scale includes items such as, "Whom can you really count on to distract you from your worries when you feel under stress?" and "Whom can you count on to console you when you are very upset?" A score for Number or Perceived Availability is calculated simply by adding up the number of persons listed. Scores for Number may range from 0 to 54. The second part of each item measures "individuals' degree of satisfaction (Satisfaction score) with the perceived support available in that particular situation" (Sarason et al., 1987, p. 499). Participants indicate their degree of satisfaction on a 6-point Likert scale ranging from Very dissatisfied (1) to Very satisfied (6). A mean score for Satisfaction is derived.

The 6-item SSQ (SSQ6) was derived from items on the original 27-item SSQ. The 27-item SSQ has been proven to be a reliable and valid measure of social support (Sarason et al., 1987). The test-retest reliability for the SSQ6 was determined over a four week period. The test-retest correlation for Number or Perceived Availability score was 0.90 and for the Satisfaction score was 0.83 (Sarason, Levine, Basham, & Sarason, 1983). The

alpha coefficients of internal reliability were 0.97 and 0.94 for Number and Satisfaction respectively (Sarason et al., 1983). The two factors only correlate mildly with each other ( $r = 0.34$ ) indicating that they are measuring two separate dimensions of social support. Both Number and Satisfaction correlated significantly and negatively with depression scores (Tardy, 1985).

### The Coping Responses Inventory

The Coping Responses Inventory (CRI), developed by Moos (1993), is a self-report measure designed to assess eight different types of coping strategies in response to stressful situations (Appendix E). The CRI is composed of 48 items, divided into two distinct types of coping responses -- approach and avoidance coping -- with four subscales under each type (Table 1). The four subscales measuring approach coping consist of: (a) logical analysis, (b) positive reappraisal, (c) seeking support and information, and (d) taking problem-solving action. The other four subscales, measuring avoidance coping, consist of: (a) cognitive avoidance, (b) acceptance or resignation, (c) seeking alternative rewards, and (d) emotional discharge. Each of the eight subscales are composed of six items. In each set of subscales, two subscales measure cognitive responses to coping and two subscales measure behavioural coping. The first two subscales under approach and avoidance coping are cognitive subscales, that is (a) logical analysis, (b) positive reappraisal, (c) cognitive avoidance, and (d) acceptance and resignation. The last two subscales under approach and avoidance coping are behavioural subscales, that is (a) seeking support and information, (b) taking problem-solving action, (c) seeking alternative rewards, and (d) emotional discharge. Approach coping was measured by averaging the responses on the four approach subscales.

Table 1

Dimensions of Coping

Type of Response	Type of Coping	
	Approach Coping	Avoidance Coping
Cognitive	1. Logical Analysis	5. Cognitive Avoidance
	2. Positive Reappraisal	6. Acceptance or Resignation
Behavioural	3. Seeking Guidance and Support	7. Seeking Alternative Rewards
	4. Problem Solving	8. Emotional Discharge

Respondents are asked to describe a stressful situation that they have encountered during the past 12 months. In the present study, the instructions on the CRI were modified so that respondents chose a stressful situation that involved their sibling. The instructions read: “This next set of questions ask you to think about a specific situation. Please think about the most important problem or stressful situation you experienced due to your sibling or involving a conflict with your sibling, DURING THE LAST 12 MONTHS. Briefly describe the problem in the space provided below. If you have not experienced a major problem, list a minor problem that you have had with your sibling.” Respondents then answer questions pertaining to the problem and a set of 10 items that measure how they appraised the stressor and its outcome. After the situation is described, respondents indicate the degree -- Not at all (1) to Fairly often (4) -- to which they used each of the 48 coping strategies listed in response to the problem described.

The CRI subscales have moderate internal consistencies (0.58 to 0.74; Moss, 1993). The average Cronbach's alpha for women is 0.65 and for men is 0.67. The subscales are moderately positively correlated (average  $r_s = 0.25$  for women and 0.29 for men), with correlations ranging from 0.03 to 0.51. Correlations among the approach subscales are higher than those among the avoidance subscales.

### Profile of Mood States

The Profile of Mood States (POMS), developed by McNair, Lorr, and Doppleman (1981), is a 65-item self-report scale measuring mood disturbance; that is, Psychological Distress (Appendix F). Items on the scale are rated using a 5-point Likert scale from 0 (Not at all) to 4 (Extremely). Participants are asked to rate how they have been feeling during the past few days. The POMS is recommended for measuring mood states in

normal populations (aged 18 and older) for research purposes. Participants are asked to rate items such as “angry,” “worn out,” “relaxed,” “cheerful,” and “miserable.” The scale yields six mood factors: (a) Tension-Anxiety, (b) Depression-Dejection, (c) Anger-Hostility, (d) Vigor-Activity, (e) Fatigue-Inertia, and (f) Confusion-Bewilderment.

Scoring involves first calculating each mood factor by summing the responses defining the factor. All items, except “relaxed” in the Tension-Anxiety scale and “efficient” in the Confusion-Bewilderment scale, are keyed in the same direction. “Relaxed” and “efficient” are coded negatively. The Total Mood Disturbance score is obtained by summing the scores on the six mood factors, with Vigor-Activity weighted negatively. This yields total scores ranging from 0 to 168.

Internal consistencies are high and test-retest reliability is adequate. Internal consistencies range from 0.87 to 0.95 for males and 0.84 to 0.95 for females. Six week test-retest reliabilities range from 0.43 to 0.52 while three week test-retest reliabilities range from reliabilities that range from 0.65 to 0.74. The lower test-retest reliability coefficients do not indicate a problem with the scale but reflect the variability of distress over time.

#### Wahler Physical Symptoms Inventory

The Wahler Physical Symptoms Inventory (WPSI), developed by Wahler (1983), was used to assess Somatic Distress (Appendix G). The WPSI is a self-report measure that asks participants to rate 42 general physical complaints on a 6-point Likert scale from 0 (Almost Never) to 5 (Nearly Every Day). Items include minor and major physical complaints such as “headaches,” “difficulty sleeping,” “feeling tired,” “chest pains,” and

“heart trouble.” Participants are instructed to rate how often each of the items bothers them. A total score is obtained by averaging the 42 items.

The WPSI has high internal consistency, test-retest reliability, and validity. Internal consistencies were high (i.e., ranged from 0.85 to 0.94) for college student, psychiatric outpatient, and rehabilitation patient populations. Internal consistencies for male and female college students ranged from 0.85 to 0.91. Test-retest reliabilities for college students over three time periods ranged from 0.45 to 0.69 for males and 0.64 to 0.82 for females. The lower test-retest reliabilities do not reflect a problem with the measure. Rather, they reflect the variability of somatic distress over time. Validity was assessed by comparing the results of the three populations. The WPSI can discriminate between populations. The developers suggest that cut-off scores of 0.6 for males and 0.8 for females be used to differentiate between student and patient scores.

#### Procedure

Potential participants were asked to sign up for the study and meet in a classroom on campus at a scheduled time. Participants were made aware of their rights as participants in both verbal and written forms. That is, participants were advised that they did not have to answer any question that made them uncomfortable, were able to stop at any time without punishment, and were informed of the nature of the study. Participants were required to read and sign the consent form (Appendix H) before the questionnaire was distributed. Instructions for choosing a sibling to report on were outlined at the beginning of the questionnaire.

Biological siblings are the most common type of siblings therefore participants were instructed on the questionnaire to choose a biological sibling to report on before other

types of siblings. Participants who had more than one biological sibling were instructed to choose the sibling that was closest in age to themselves. If the participant did not have a biological sibling, they could report on the step, adopted, or half sibling that was closest in age to themselves.

Consenting participants responded to items on the questionnaire. The questionnaire is a self-report instrument made up of eight sections: (a) the Coopersmith Self-esteem Measure (SEI), (b) the 6-item Social Support Questionnaire (SSQ6), (c) the Coping Responses Inventory (CRI), (d) the Adult Sibling Relationship Questionnaire (ASRQ), (e) the Brief College Hassles Scale (BCHS), (f) the Profile of Mood States (POMS), (g) the Wahler Physical Symptoms Inventory (WPSI) and (h) demographic information such as age, gender, and social economic status (Appendix I). The order of the materials were partially counterbalanced for demands and resources. The sibling conflict measure (i.e., the ASRQ) which includes both negative (i.e., conflict and rivalry items) and positive items (i.e., warmth) always appeared first on the questionnaire to ensure the face validity and increase interest in the study. Daily hassles (i.e., BCHS) appeared before the resource measures (i.e., self-esteem, coping strategies, and social support) measures on half of the questionnaires and after the resource measures on the other half. The coping measure was always between the self-esteem and social support measures to ensure that the effect of self-esteem on social support was minimal. The distress measures always appeared after the demand and resource measures but before demographic measures. Counter-balancing as explained yields two questionnaire orders: (a) ASRQ, BCHS (daily hassles), SEI (self-esteem), CRI (coping), SSQ6 (social support), POMS (psychological distress), WPSI

(somatic distress), demographic items, and (b) ASRQ, SEI, CRI, SSQ6, BCHS, POMS, WPSI, and demographic items.

Once the participants completed the questionnaire, they were given a debriefing sheet (Appendix J) and the location to receive feedback once the results of the study were available.



## Results

### Preliminary Analyses

The study recruited 410 participants, 19 of which were excluded from analyses due to missing data on entire scales. The ages of the remaining 391 participants (140 male, 251 female) ranged from 17 to 43 ( $M = 19.4$ ,  $SD = 3.15$ ). Prior to determining the subsample and statistical analyses, the data was examined for missing data points and outliers. Missing data on the original sample ( $N = 391$ ) represented less than 0.5% of all possible data points. Missing data points were replaced with the sample mean for those variables. Scores more than three standard deviations from the sample mean on scale scores were considered outliers. Outliers on scale scores represented less than 0.5% of all possible data points. Outlying cases were assigned a raw score on a scale that was one unit larger than the next most extreme score in the distribution. Therefore, cases considered outliers remained deviant, but not as deviant or influential as they were initially. Tabachnik and Fidell (1989) suggest this method because it allows outlying cases to remain in the analyses but reduces their impact. Outlying scores were adjusted on the Profile of Mood States ( $n = 3$ ), and the Wahler Physical Symptoms Inventory ( $n = 4$ ).

Prior to testing for group differences, the data were examined for assumptions of normality and linearity. Scale scores were normally distributed with skewness and kurtosis close to zero. Graphical methods, including residual plots, confirmed that scale scores were normally distributed. Linearity was examined through graphical and correlational methods. There were no significant problems with linearity. Multicollinearity was not a problem either, as no two variables correlated above 0.70. Internal consistencies (Chronbach's alpha) were determined for each scale. Internal consistency scores ranged

from 0.85 to 0.95 on the individual scales measuring the independent and dependent variables (Table 2). The POMS had the highest internal consistency ( $\alpha = 0.9502$ ) and the BCHS had the lowest internal consistency ( $\alpha = 0.8507$ ). Although internal consistencies on the Approach subscales of the CRI ranged from 0.54 to 0.72, the overall internal consistency for the Approach scale (including all subscales) was quite high. These findings are similar to previously reported internal consistencies for the CRI (Moos, 1993). Overall, internal reliabilities of the scales were high.

The data was tested for order and gender effects using analysis of variance (ANOVA) and partial correlations on the original sample ( $N = 391$ ). For these analyses, the significance level was set at .05, two-tailed. There were no statistically significant order effects for the two different versions of the questionnaire on the key variables; that is, there was no difference in the average scale scores based on questionnaire version. As well, the different versions did not alter the correlations.

However, ANOVAs indicated statistically significant differences between genders on Daily Hassles, Self-esteem, Social Support Number, Social Support Satisfaction, and Approach coping (Table 3). Females reported significantly higher amounts of Daily Hassles, social support Number, social support Satisfaction, and Approach coping. Males, on the other hand, reported significantly higher Self-esteem. Further analyses, using partial correlations controlling for gender, revealed that gender did not impact the correlations of the independent variables with distress. Therefore, differences in questionnaire version and gender did not effect the analyses.

The relationship of Sibling Conflict to other variables not included in the hypotheses was investigated. As expected, Sibling Conflict was negatively correlated with Warmth

Table 2

Internal Consistency Reliabilities (Chronbach's Alpha) for Scale and Subscale Scores

Scale	N	$\alpha$	# of Items
Conflict Scale (ASRQ)	391	0.9247	23
Coopersmith Self-Esteem Inventory	391	0.8541	25
Approach Scale Scores (CRI)	391	0.8638	24
Logical Analysis Subscale	391	0.6484	6
Positive Reappraisal Subscale	391	0.6754	6
Support/ Information Seeking Subscale	391	0.5498	6
Problem Solving Subscale	391	0.7265	6
Brief College Hassles Scale	391	0.8507	20
Profile of Mood States	391	0.9502	58
Tension-Anxiety Subscale	391	0.8843	9
Depression-Dejection Subscale	391	0.9450	15
Anger-Hostility Subscale	391	0.9187	12
Vigor-Activity Subscale	391	0.8531	8
Fatigue-Inertia Subscale	391	0.8807	7
Confusion-Bewilderment Subscale	391	0.8314	7
Wahler Physical Symptoms Inventory	391	0.9141	42

Table 3

Descriptive Statistics and ANOVA Results Regarding Potential Gender Differences onKey Variables

Variable	n	M	SD	t-value	df	p-value
Daily Hassles				1.994	389	.047
Females	251	3.392	.912			
Males	140	3.201	.905			
Self-esteem				-2.014	389	.045
Females	251	64.032	22.187			
Males	140	68.629	20.605			
Social Support Number				3.622	389	.000
Females	251	27.327	11.898			
Males	140	22.686	12.584			
Social Support Satisfaction				2.447	389	.015
Females	251	5.109	0.845			
Males	140	4.881	0.9419			
Approach Coping				2.758	389	.006
Females	251	1.945	0.496			
Males	140	1.809	0.407			

( $r = -.185$ ,  $p < .001$ ). Also, as expected, Sibling Conflict was positively related to the item at the end of the ASRQ measuring Intensity of Conflicts with their sibling ( $r = .576$ ,  $p < .001$ ) and the item on the BCHS involving Hassles with Siblings ( $r = .362$ ,  $p < .001$ ). It was determined that the Sibling Conflict variable was related to other variables as theoretically expected.

#### Relatively High Sibling Conflict Subsample

A relatively high Sibling Conflict subsample of 258 participants (97 male, 161 female), aged 18 to 30 ( $M = 19.0$ ,  $SD = 1.97$ ), was determined from Sibling Conflict scale scores. These scores for the original sample ( $N = 391$ ) ranged from 1 to 4.43 ( $M = 2.56$ ,  $SD = 0.72$ ) on a Likert scale from 1 to 5. It was decided that participants who scored 2.25 or higher on the Sibling Conflict variable (i.e., approximately two-thirds of the original sample) would comprise the subsample. This cut-off score allowed a range of scores from 2.25 to 4.43 ( $M = 2.96$ ,  $SD = 0.49$ ). A cut-off score of 2.25 was chosen to ensure that participants experiencing little or no Sibling Conflict were not included in the analyses. This research was primarily interested in persons who were experiencing at least a moderate amount of conflict in their sibling relationship. On the other hand, choosing higher than 2.25 would have restricted the range and created potential floor effects. There was also a concern that a higher cut-off score would artificially increase the risk of Type-II error (i.e., finding no relationship between Sibling Conflict and Distress when one might actually exist).

Most of the participants in the subsample were firstborn children and reported on second born siblings. Siblings that were reported on ranged in age from 15 to 25 years ( $M = 18.8$ ,  $SD = 3.10$ ) and there were slightly more female siblings ( $n = 134$ ) than male

siblings ( $n = 124$ ). Approximately 63% of subsample participants lived with their siblings ( $n = 163$ ) and 72% lived with their parents ( $n = 186$ ). As well, approximately 43% of the subsample participants reported that they came from a family of two children ( $n = 111$ ), whereas 36% came from a family of three children ( $n = 93$ ), 13% came from a family of four children ( $n = 33$ ), and less than 1% came from a family of over five children ( $n = 21$ ). Almost all siblings, 94.5%, that were reported on were biological siblings ( $n = 242$ ). Approximately 5.5% of the siblings reported on were other types of siblings, such as twins ( $n = 6$ ), half siblings ( $n = 5$ ), and adopted siblings ( $n = 4$ ).

The participants in the subsample statistically differed from those not included in the subsample (Table 4) in terms of: (a) age of participant, (b) sibling age, (c) living with their parents, (d) living with their sibling, (e) warmth of the sibling relationship, and (f) intensity of conflicts. Participants in the subsample were younger ( $M = 18.97$ ,  $SD = 1.97$ ) than those not included ( $M = 20.26$ ,  $SD = 4.57$ ). The age of siblings reported on was subsequently lower for the subsample ( $M = 18.82$ ,  $SD = 3.18$ ) than those not in the subsample ( $M = 20.52$ ,  $SD = 3.70$ ). Subsample participants reported that they lived with their parents more so than those not included in the subsample. As expected, those who lived with their sibling reported significantly more conflict than those who did not; participants in the subsample were more likely to live with their sibling than those not included in the subsample. Participants in the subsample reported that they had lower warmth and more intense conflicts with their siblings than those not included in the subsample. Interestingly, warmth of the sibling relationship was not related to either Psychological ( $r = -.121$ ,  $p = .053$ ) nor Somatic Distress ( $r = -.065$ ,  $p = .301$ ). The subsample did not differ from the other participants in terms of socio-economic status.

Table 4

Differences Reported as Means, Standard Deviations and t-Values Between ParticipantsIncluded and Not Included in the Subsample

Variable	<u>n</u>	<u>M</u>	<u>SD</u>	<u>t-value</u>	<u>df</u>	<u>p-value</u>
Age of Participants				-3.889	386	.000
Subsample	259	18.97	1.97			
Not in Subsample	131	20.26	4.57			
Sibling Age				-4.746	389	.000
Subsample	260	18.82	3.18			
Not in Subsample	133	20.52	3.70			
Living with Parents				-2.610	389	.009
Subsample	260	1.28	0.45			
Not in Subsample	133	1.41	0.49			
Living with Sibling				-3.966	389	.000
Subsample	260	1.37	0.48			
Not in Subsample	133	1.57	0.50			
Warmth of Relationship				-2.789	389	.006
Subsample	260	3.20	0.76			
Not in Subsample	133	3.42	0.71			
Intensity of Conflicts				10.276	389	.000
Subsample	260	4.35	1.35			
Not in Subsample	133	2.86	1.38			

The subsample was also examined for order and gender effects. The gender effects were similar to those found for the original sample (see above). There were no statistically significant effects of questionnaire version or gender on the correlations of the independent variables with Distress.

### Tests of the Hypotheses

All tests of the hypotheses were performed using the subsample ( $n = 258$ ). An alpha level of .05, two-tailed, was used for all correlational analyses (see Table 5 for descriptive statistics and Table 6 for correlations).

#### Hypothesis 1: Sibling Conflict and Distress

The hypothesis that Sibling Conflict would be positively related to distress was confirmed. Pearson product moment correlations ( $r$ ) were computed for Sibling Conflict and each of the distress scale scores separately. Somatic Distress and Psychological Distress correlated strongly with each other,  $r = .589$ ,  $p < .001$ . Sibling Conflict was significantly and positively correlated with Somatic Distress,  $r = .158$ ,  $p = .011$ , and Psychological Distress,  $r = .194$ ,  $p = .002$ .

#### Hypothesis 2: Daily Hassles and Distress

As expected, the hypothesis that Daily Hassles would be positively related to Distress was confirmed. Daily Hassles correlated positively with both Somatic Distress,  $r = .418$ ,  $p < .001$ , and Psychological Distress,  $r = .480$ ,  $p < .001$ .

#### Hypothesis 3: Demand Variables with Distress

A multiple regression analysis was used to assess whether Sibling Conflict and Daily Hassles together explained more of the variance in Distress than either of these variables



Table 5

Descriptive Statistics for the Original Sample and the Subsample on Key Variables

Variable	Original Sample (N = 391)		Subsample (n = 258)	
	Mean	SD	Mean	SD
Sibling Conflict	2.55	0.716	2.96	0.485
Daily Hassles	3.32	0.913	3.49	0.925
Self-esteem	65.68	21.72	62.80	22.35
Social Support Number	25.67	12.34	24.81	12.48
Social Support Satisfaction	5.03	0.887	4.93	0.901
Approach Coping	1.90	0.470	1.91	0.478
Psychological Distress	43.87	40.01	49.62	41.06
Somatic Distress	0.992	0.541	1.05	0.543

Table 6

Subsample (n = 258) Correlations Among the Independent (Resources and Demands) and  
Dependent Variables

	Demand Variables		Resource Variables				Distress Variables	
	Conflict	Hassles	S-E	Number	Sat.	App.	Psych.	Somatic
Conflict	1.00	.208**	-.209**	-.089	.006	-.065	.194**	.158*
Hassles		1.00	-.477**	-.116	-.158*	.093	.480**	.418**
S-E			1.00	2.17**	.276**	-.003	-.595**	-.422**
Number				1.00	.349**	.173**	-.187**	.007
Sat.					1.00	.118	-.271**	-.173**
App.						1.00	.075	.168**
Psych.							1.00	.589**
Somatic								

Note. Conflict = Sibling Conflict; Hassles = Daily Hassles; S-E = Self-esteem; Number = Social Support Number; Sat. = Social Support Satisfaction; App. = Approach coping; Psych. = Psychological Distress; Somatic = Somatic Distress.

\*\*Correlation is significant at the 0.01 level (two-tailed).

\*Correlation is significant at the 0.05 level (two-tailed).

alone. For these analyses, the  $R^2$  of the regression was compared to the individual squared correlations ( $r^2$ ) of Sibling Conflict and Daily Hassles to Distress.

The first regression analysis used Somatic Distress as the dependent variable and Sibling Conflict and Daily Hassles as the predictor variables. The model was significant,  $F = 27.925$ ,  $p < .001$ ,  $R = .424$ . The  $R^2$  of the regression model ( $R^2 = .180$ ) was then compared to the individual squared correlations of Sibling Conflict to Somatic Distress ( $r^2 = .024$ ) and Daily Hassles to Somatic Distress ( $r^2 = .175$ ). The  $R^2$  of the regression model was larger in terms of absolute numbers, if only marginally larger than that of Daily Hassles, than the individual squared correlations. Due to the marginal difference in the  $r^2$  of Daily Hassles and Somatic Distress to the  $R^2$  of the regression, a step-wise multiple regression analysis was performed. The step-wise multiple regression excluded Sibling Conflict in the analysis ( $F$ -to-remove  $> .10$ ),  $F(1, 256) = 54.13$ ,  $p < .001$ ,  $R = .418$ . This indicates that Sibling Conflict should not be included in a model to predict Somatic Distress.

The second regression analysis used Psychological Distress as the dependent variable and both Sibling Conflict and Daily Hassles as predictor variables. The regression analysis using this model was significant,  $F(2, 255) = 40.205$ ,  $p < .001$ ,  $R = .490$ . The  $R^2$  of the regression ( $R^2 = .240$ ) was compared to the square of the individual correlations for Sibling Conflict ( $r^2 = .0376$ ) and Daily Hassles ( $r^2 = .2304$ ) to Psychological Distress. The  $R^2$  of the regression model ( $R^2 = .240$ ) was larger, again only marginally, than the squared correlations of the independent variables to Distress. Similar to the test for Somatic Distress, Sibling Conflict was excluded from the model predicting Psychological Distress based on a step-wise multiple regression ( $F(1, 256) = 76.799$ ,  $p < .001$ ). Therefore, the

hypothesis was not confirmed. The independent variables together did not contribute more of the variance to Psychological Distress than either variable alone.

#### Hypothesis 4: Self-esteem and Distress

It was hypothesized that Self-esteem, as measured by the Coopersmith Self-esteem Inventory, would negatively relate to Distress. The expected relationship between Self-esteem and Distress was confirmed. Pearson product moment correlations revealed that Self-esteem correlated negatively with both Somatic Distress ( $r = -.422, p < .001$ ) and Psychological Distress ( $r = -.595, p < .001$ ).

#### Hypothesis 5: Social Support and Distress

Social support consisted of two variables, namely social support satisfaction (i.e., Satisfaction) and social support number (i.e., Number). It was postulated that both social support variables would be negatively associated with Distress. Pearson product moment correlations confirmed that Satisfaction was negatively related to both Somatic ( $r = -.173, p = .005$ ) and Psychological Distress ( $r = -.271, p < .001$ ). Number, on the other hand, was significantly related to Psychological Distress ( $r = -.187, p = .003$ ) but not Somatic Distress ( $r = .007, p = .913$ ). Overall, the hypothesis that social support would be negatively related to Distress was confirmed.

#### Hypothesis 6: Approach Coping and Distress

The hypothesis that Approach coping and Distress would be negatively related was not confirmed. Pearson product moment correlations revealed that Approach coping was positively correlated to both Somatic Distress ( $r = .168, p = .007$ ) and unrelated to Psychological Distress ( $r = .075, p = .229$ ). In other words, Approach coping was significantly related to Somatic Distress but not in the hypothesized direction.

The relationship of Approach coping to other variables was investigated. Previous research had indicated that Approach coping is often associated with greater perceived control of a situation. The Perception of Control for the situation described on the CRI was measured by an item appearing after the description of the problem (question 3d). Only one of the four Approach coping subscales, Problem-solving ( $r = .148$ ,  $p = .017$ ), was significantly related to appraising more control over the situation (see Table 7 for correlations).

#### Hypothesis 7: Resource Variables with Distress

Having completed separate analyses on the resource variables (i.e., Self-esteem, Social Support, and Approach coping) as they relate to Distress, a multiple regression was used to analyze whether a model using all three resource variables explained more of the variance than any of the variables alone. Both social support factors, Satisfaction and Number, were included. For this analysis, the  $R^2$  of the model was compared to the  $r^2$ 's of each predictor.

The first regression analysis used Somatic Distress as the dependent variable and Self-esteem, Number, Satisfaction, and Approach coping as the predictor variables. The regression analysis using this model was statistically significant,  $F(4, 253) = 18.070$ ,  $p < .001$ ,  $R = .471$ . The  $R^2$  of the regression model ( $R^2 = .222$ ) was then compared to the individual squared correlations of Self-esteem ( $r^2 = .178$ ), Number ( $r^2 = .000049$ ), Satisfaction ( $r^2 = .030$ ), and Approach coping ( $r^2 = .028$ ) to Somatic Distress. The  $R^2$  of the regression model ( $R^2 = .222$ ) was, as an absolute number, larger than any of the squared correlations of the predictor variables to distress. Due to the small differences between the  $R^2$  of the regression and the  $r^2$ 's of the resource variables, a step-wise multiple

Table 7

Subsample (n = 258) Approach Scale and Approach Subscale Correlations With EachOther and Perception of Control

	LA	PR	SI	PS	Approach	Control
LA	1.00	.621**	.648**	.640**	.870**	-.007
PR		1.00	.506**	.563**	.810**	.071
SI			1.00	.585**	.810**	.017
PS				1.00	.845**	.148**
Approach					1.00	.072
Control						1.00

Note. LA = Logical Analysis; PR = Positive Reappraisal; SI = Seeking Support and Information; PS = Problem-solving; Approach = Approach coping; Control = Perception of Control.

\*\*Correlation is significant at the 0.01 level (two-tailed).

\*Correlation is significant at the 0.05 level (two-tailed).

regression was performed. The step-wise multiple regression, using a probability of .05 for F-to-enter and .10 for F-to-remove, indicated that a model using Self-esteem and Social Support Satisfaction may be used to predict Somatic Distress,  $F(2, 255) = 33.013$ ,  $p < .001$ . This partially confirms that the independent variables in combination contribute more of the variance to Somatic Distress than any of the variables alone. Although Social Support Number and Approach Coping were excluded from the regression model. Self-esteem and Social Support Satisfaction in combination may be used to predict Somatic Distress.

The second regression analysis used Psychological Distress as the dependent variable and Self-esteem, Number, Satisfaction, and Approach coping as the predictor variables. The regression analysis using this model was statistically significant,  $F(4, 253) = 37.990$ ,  $p < .001$ ,  $R = .613$ . The  $R^2$  of the regression ( $R^2 = .375$ ) was compared to the square of the individual correlations ( $r^2$ ) of Self-esteem ( $r^2 = .354$ ), Number ( $r^2 = .035$ ), Satisfaction ( $r^2 = .073$ ), and Approach coping ( $r^2 = .005$ ) to Psychological Distress. The  $R^2$  of the regression model ( $R^2 = .375$ ) was, as an absolute number, larger than any of the squared correlations of the predictor variables to distress. Again, a step-wise multiple regression was performed. The step-wise multiple regression found that Self-esteem and Social Support Satisfaction together predicted Psychological Distress,  $F(2, 255) = 73.601$ ,  $p < .001$ . Therefore, the hypothesis was confirmed; a combination of resource variables better predicted Psychological Distress than any resource variable alone.

## Discussion

This study attempted to understand the relationships of demands and resources to distress (i.e., both psychological and somatic distress). There was overall support for the model, with support for all but two of the hypothesized relationships. There were significant relationships of sibling conflict, daily hassles, self-esteem, and social support to both psychological and somatic distress. However, approach coping did not relate to distress in the predicted manner. Both demands and resources were significantly related to distress. This indicates that a stress process model needs to consider both the level of demands that people face and the resources that are available. A model which examines only one side (e.g., resources and not demands) is inadequate for explaining the stress process.

Of the demands, daily hassles was the most predictive of distress, accounting for 17% of the variance in somatic distress and 23% of the variance in psychological distress. Even though the mean for daily hassles was towards the low end of the scale, it proved to be an important predictor of distress. Even a mild to moderate level of daily hassles has a large effect on the stress process. Higher levels would surely be more closely associated with distress and account for more of the variance.

Sibling conflict, although significantly related to distress, surprisingly accounted for little, if any, of the variance for distress. It appears that, in young adult sibling relationships, sibling conflict may not be a very important stressor. Participants were more concerned about the daily hassles that they encounter rather than interpersonal relationships with siblings. The present participants reported on average that they



experienced sibling conflict only "somewhat" in their relationship. Possibly, higher levels of sibling conflict would be associated with distress to a greater degree.

All of the resource variables assessed, except approach coping, were negatively related to distress in the expected manner. Surprisingly, self-esteem was far more predictive of distress than the other two resources, although it did significantly correlate with social support number and satisfaction. Given the results, it is likely that the population studied was resourceful, independent, and used to taking on and meeting challenges. As a group, they reported moderate to high levels of self-esteem, which leads the investigator to postulate that participants believed they could overcome problems and create positive outcomes. Further, for young adults self-esteem may be more important to them at this time in their development than the other resources. Although the participants were quite satisfied with the support that they received, it did not largely predict distress.

The expected inverse relationship of approach coping to distress was not confirmed; in fact, it had a direct relationship with distress. Upon examination of the coping situations described on the CRI, it was evident that many participants had difficulty thinking of or describing an important problem or stressful situation involving a sibling. Many participants wrote that they had not experienced a stressful situation with their sibling during the past year. In fact, 17 participants were excluded from analyses because they did not complete this measure, having experienced no problems with their sibling during the past year that they could remember. Perhaps asking about stressful situations in general, rather than within the context of the sibling relationship, would have yielded the expected results. Note also that neither approach coping overall nor the approach coping subscales correlated with perceived control in the predicted manner. Previous research had indicated

that approach coping is often related to perceiving more control of the situation. The CRI is a well-developed and researched measure of coping skills. Therefore, the results are not likely due to poor instrumentation. The nature of the problems described by participants may have contributed to the weak relationships of Approach coping with control and distress variables. Generally, the participants felt their concerns were quite minor (e.g., disputes over who borrowed the car) and not long-lasting (i.e., most disputes lasted one day or less). It is interesting to note that approach coping was directly related to somatic symptoms of distress. This could indicate that investing effort in approach coping may have a physical cost or it could indicate that those experiencing physical ailments may be more likely to use approach coping to deal with the problem.

It does not appear that the population was facing major problems which would require a lot of social support and coping. Although, analyses revealed that self-esteem and social support satisfaction were important resources for predicting distress. For this population it does not appear that sibling conflict is an important demand. Populations facing highly emotional and distressing problems might rely on social support and approach coping to a greater degree, thus strengthening the relationships to distress. One of the strengths of this model of the stress process is that it allows for fluctuations within the demands and resources. That is, for distinct populations different demands and resources, or combinations of demands and resources, may be more important than others. Although two of the hypotheses were not confirmed, it does not detract from the model as a whole.

This study contributed to two different areas. It provided a more complete and comprehensive model of the stress process taking into consideration more than one type

of demand and resource. It also added to the adult sibling research literature. Sibling conflict appears to carry over into adulthood, although for university students it does not appear to be a prominent demand. Finally, this research related a sibling relationship variable to the stress process.

### Methodological Issues

The main methodological issue pertains to sibling conflict. The population as a whole experienced low levels of sibling conflict. No one in the current study reported extremely high frequency or intensity of sibling conflict and only a few reported a lot of conflict in their sibling relationship. For sibling conflict to account for more of the variance in distress, levels of conflict may need to be higher than in this study. Pre-screening of participants on sibling conflict in future studies may ensure that the population being studied experiences high levels of sibling conflict. For sibling conflict to be considered an important demand, higher levels of conflict may be necessary. This population tended to be high functioning; a clinical population may not be as high functioning and may experience more conflict.

The current participants also experienced low levels of distress, especially somatic distress. Had they experienced higher levels of both sibling conflict and distress, it is likely that more of the variance would have been accounted for. Further, the participants did not experience high levels of demands. Therefore, active approach coping may not have been necessary.

Another methodological problem is that of generalization. The present university sample was homogeneous with respect to age and level of education. Thus, the results may not generalize to other populations. Also, there were many more females than males.

Although there were no gender differences for sibling conflict and distress, females and males differed on daily hassles, self-esteem, social support, and approach coping.

Although there were differences in the numbers of females and males participating in the study, the difference did not appear to be a major factor as gender did not influence the correlations.

Finally, the current study had participants report on the sibling that was closest in age to themselves. This may not have been the sibling relationship with the most conflict. However, 43% of the sample had only one sibling, so changing the instructions may not have influenced the results to a great degree.

#### Future Research

Overall, the current population did not experience high levels of sibling conflict. A future study could screen for sibling conflict prior to data collection, ensuring higher levels of conflict. It is likely that sibling conflict would be more directly related to distress in a population in which sibling conflict is more pronounced. A clinical sample experiencing sibling conflict would validate the model further.

Future studies should focus on community samples because they are more representative of the diversity and variety of the general population. Also, research should compare community and clinical samples to determine which variables in the stress process best predict distress for these populations. Future research should also consider sibling relationships in which one of the siblings is ill (i.e., suffering from chronic physical or mental disorders). It is likely that both the "ill" and the "well" siblings would report higher levels of hassles, sibling conflict, and distress than normal populations. The current study should be replicated in different populations of siblings, for example adolescents, young

adults, middle aged, and elderly siblings. It would be interesting to note the changes of the relationship of sibling conflict to distress over the life span. It would also be interesting to investigate physical abuse between siblings in adolescence and early adulthood to see whether this is associated with sibling conflict and higher levels of distress.

It is obvious from the results of this research that a lot of the variance predicting distress is unaccounted for. Future research should investigate other potential demands and resources to try to account for more of the variance. It is interesting to note that the perceived warmth of the sibling relationship, a potential resource variable, was not significantly related to distress in this research. The results indicate the importance of investigating both demands and resources in a stress process model. Any future research should consider both sides of the model.

The nature of the problems described on the coping measure should be investigated further in future research. It is recommended that future research consider measuring coping responses in a variety of situations to gain a more complete understanding of coping.

Future studies may want to consider measuring demands and resources over time to analyze whether gains or losses effect the outcome of the stress process. It is likely that persons' perceptions of demands and resources change over time and life experiences. Longitudinal studies could further validate the transactional nature of the stress process.

Finally, the present study contributed to our knowledge of the stress process, but more detailed, in-depth analyses are required. Future research should attempt to explain the hypothesized relationships of the variables simultaneously, using structural equation modeling. This method could increase our understanding of the stress process model.

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## Appendix A

Adult Sibling Relationship Questionnaire

This questionnaire is concerned with your relationship with one of your siblings. Each question asks you to rate how much different behaviours and feelings occur in your relationship. Try and answer each question as quickly and accurately as you can. Try and answer the questions as your relationship is now, not how it was in the past, nor how you think it might be in the future. In the remainder of this section, whenever you see THIS SIBLING or YOUR SIBLING we are talking about the specific sibling you are completing the study about. We begin by asking you some general questions about your sibling and yourself. Please circle, check, or fill in the correct response.

***First tell us about yourself:***

1. Your age: \_\_\_\_\_
2. Your gender:                   (0) Male      (1) Female
3. Your birth order:  
(1) firstborn, (2) secondborn, (3) thirdborn, (4) fourthborn, (5) laterborn

***Now tell us about your sibling:***

4. This sibling's age: \_\_\_\_\_
5. This sibling's gender:      (0) Male      (1) Female
6. This sibling's birth order:  
(1) firstborn, (2) secondborn, (3) thirdborn, (4) fourthborn, (5) laterborn

***Now tell us about your family relationships:***

7. Do you live with your sibling?

---

(1) yes     (2) no

If no, how far does this sibling live from you?  
(check the correct response)

- (1) same city
  - (2) different city, less than 100 miles
  - (3) between 100 and 200 miles
  - (4) between 201 and 500 miles
  - (5) between 501 and 1000 miles
  - (6) more than 1,000 miles
- 

8. Do you live in your parents' home?

(1) yes     (2) no

9. How often do you and this sibling see each other? (check the correct response)

- (1) Not at All
- (2) Less than once per month
- (3) At least once per month
- (4) At least once per week
- (5) A few times a week
- (6) Every day

10. How often does this sibling phone or contact you by e-mail?

- (1) Not at All
- (2) Less than once per month
- (3) At least once per month
- (4) At least once per week
- (5) A few times a week
- (6) Every day

11. How often do you phone or use e-mail to contact this sibling?

- (1) Not at All  
 (2) Less than once per month  
 (3) At least once per month  
 (4) At least once per week  
 (5) A few times a week  
 (6) Every day

12. How often do you and this sibling see each other for holidays and family gatherings?

- (1) Not at All  
 (2) Less than once per month  
 (3) At least once per month  
 (4) At least once per week  
 (5) A few times a week  
 (6) Every day

13. What is your relationship to this sibling?

- (1) biological sibling  
 (2) twin  
 (3) step sibling  
 (4) half sibling  
 (5) adopted sibling  
 (6) other (please explain) \_\_\_\_\_

*Now we would like some information about your other siblings*

DO NOT INCLUDE THIS SIBLING HERE

Age	Gender	Relationship	Age	Gender	Relationship
	M = 0 F = 1	(biological = 1, twin = 2, step = 3, half = 4, other = 5)			(biological, twin step, half, other)
Sib #1: _____	M F	_____	Sib #5: _____	M F	_____
Sib #2: _____	M F	_____	Sib #6: _____	M F	_____
Sib #3: _____	M F	_____	Sib #7: _____	M F	_____
Sib #4: _____	M F	_____	Sib #8: _____	M F	_____

***Please refer to the sibling you chose to answer the following questions.***

Refer to this scale, unless otherwise prompted, to answer the next questions:

- (1) Hardly at All
- (2) A Little
- (3) Somewhat
- (4) Very Much
- (5) Extremely Much

	1	2	3	4	5
	Hardly at All		Somewhat		Extremely Much
22. How much do you and this sibling have in common? . . . . .	1	2	3	4	5
23. How much do you talk to this sibling about things that are important to you? . . . . .	1	2	3	4	5
24. How much does this sibling talk to you about things that are important to him or her? . .	1	2	3	4	5
25. How much do you and this sibling argue with each other? . . . . .	1	2	3	4	5
26. How much does this sibling think of you as a good friend? . . . . .	1	2	3	4	5
27. How much do you think of your sibling as a good friend? . . . . .	1	2	3	4	5
28. How much do you irritate this sibling? . . . . .	1	2	3	4	5
29. How much does this sibling irritate you? . . .	1	2	3	4	5
30. How much does this sibling admire you? . . .	1	2	3	4	5
31. How much do you admire this sibling? . . . . .	1	2	3	4	5

32. Do you think your mother favors you or this sibling more?

- (1) I am usually favored  
 (2) I am sometimes favored  
 (3) Neither of us is favored  
 (4) This sibling is sometimes favored  
 (5) This sibling is usually favored

33. Does this sibling think your mother favors him/her or you more?

- (1) I am usually favored  
 (2) I am sometimes favored  
 (3) Neither of us is favored  
 (4) This sibling is sometimes favored  
 (5) This sibling is usually favored

	1	2	3	4	5
	Hardly at All		Somewhat		Extremely Much
34. How much does this sibling try to cheer you up when you are feeling down? . . . . .	1	2	3	4	5
35. How much do you try to cheer this sibling up when he or she is feeling down? . . . . .	1	2	3	4	5
36. How competitive are you with this sibling? . . . . .	1	2	3	4	5
37. How competitive is this sibling with you? . . . . .	1	2	3	4	5
38. How much does this sibling go to you for help with non-personal problems? . . . . .	1	2	3	4	5
39. How much do you go to this sibling for help with non-personal problems? . . . . .	1	2	3	4	5
40. How much do you dominate this sibling? . . . . .	1	2	3	4	5
41. How much does this sibling dominate you? . . . . .	1	2	3	4	5
42. How much does this sibling accept your personality? . . . . .	1	2	3	4	5
43. How much do you accept your sibling's personality? . . . . .	1	2	3	4	5



44. Do you think your father favors you or this sibling more?

- (1) I am usually favored  
 (2) I am sometimes favored  
 (3) Neither of us is favored  
 (4) This sibling is sometimes favored  
 (5) This sibling is usually favored

45. Does this sibling think your father favors him/her or you more?

- (1) I am usually favored  
 (2) I am sometimes favored  
 (3) Neither of us is favored  
 (4) This sibling is sometimes favored  
 (5) This sibling is usually favored

	1	2	3	4	5
	Hardly at All		Somewhat		Extremely Much
46. How much does this sibling know about you? . . . . .	1	2	3	4	5
47. How much do you know about this sibling?	1	2	3	4	5
48. How much do you and this sibling have similar personalities? . . . . .	1	2	3	4	5
49. How much do you discuss your feelings or personal issues with this sibling? . . . . .	1	2	3	4	5
50. How much does this sibling discuss his or her feelings or personal issues with you? . . . . .	1	2	3	4	5
51. How often does this sibling criticize you? . . . . .	1	2	3	4	5
52. How often do you criticize this sibling? . . . . .	1	2	3	4	5
53. How close do you feel to this sibling? . . . . .	1	2	3	4	5
54. How close does this sibling feel to you? . . . . .	1	2	3	4	5
55. How often does this sibling do things to make you mad? . . . . .	1	2	3	4	5

	1	2	3	4	5
	Hardly at All		Somewhat		Extremely Much
56. How often do you do things to make this sibling mad? . . . . .	1	2	3	4	5
57. How much do you think that this sibling has accomplished a great deal in life? . . . . .	1	2	3	4	5
58. How much does this sibling think that you have accomplished a great deal in life? . . . . .	1	2	3	4	5
59. Does this sibling think your mother supports him/her or you more?					
___ (1) I usually get more support					
___ (2) I sometimes get more support					
___ (3) We are supported equally					
___ (4) This sibling sometimes gets more support					
___ (5) This sibling usually gets more support					
60. Do you think your mother supports you or this sibling more?					
___ (1) I usually get more support					
___ (2) I sometimes get more support					
___ (3) We are supported equally					
___ (4) This sibling sometimes gets more support					
___ (5) This sibling usually gets more support					
	Hardly at All		Somewhat		Extremely Much
61. How much can you count on this sibling to be supportive when you are feeling stressed? . . .	1	2	3	4	5
62. How much can this sibling count on you to be supportive when he or she is feeling stressed? . . . . .	1	2	3	4	5
63. How much does this sibling feel jealous of you? . . . . .	1	2	3	4	5
64. How much do you feel jealous of this sibling? . . . . .	1	2	3	4	5

	1	2	3	4	5
	Hardly at All		Somewhat		Extremely Much
65. How much do you give this sibling practical advice? (e.g., household or car advice) . . . . .	1	2	3	4	5
66. How much does this sibling give you practical advice? . . . . .	1	2	3	4	5
67. How much is this sibling bossy with you? . .	1	2	3	4	5
68. How much are you bossy with this sibling? .	1	2	3	4	5
69. How much do you accept this sibling's lifestyle? . . . . .	1	2	3	4	5
70. How much does this sibling accept your lifestyle? . . . . .	1	2	3	4	5

71. Does this sibling think your father supports him/her or you more?

- (1) I usually get more support  
 (2) I sometimes get more support  
 (3) We are supported equally  
 (4) This sibling sometimes gets more support  
 (5) This sibling usually gets more support

72. Do you think your father supports you or this sibling more?

- (1) I usually get more support  
 (2) I sometimes get more support  
 (3) We are supported equally  
 (4) This sibling sometimes gets more support  
 (5) This sibling usually gets more support

	1	2	3	4	5
	Hardly at All		Somewhat		Extremely Much
73. How much do you know about this sibling's relationships? . . . . .	1	2	3	4	5
74. How much does this sibling know about your relationships? . . . . .	1	2	3	4	5

	1	2	3	4	5
	Hardly at All		Somewhat		Extremely Much
75. How much do you and this sibling think alike? .....	1	2	3	4	5
76. How much do you really understand this sibling? .....	1	2	3	4	5
77. How much does this sibling really understand you? .....	1	2	3	4	5
78. How much does this sibling disagree with you about things? .....	1	2	3	4	5
79. How much do you disagree with this sibling about things? .....	1	2	3	4	5
80. How much do you let this sibling know you care about him or her? .....	1	2	3	4	5
81. How much does this sibling let you know he or she cares about you? .....	1	2	3	4	5
82. How much does this sibling put you down? ..	1	2	3	4	5
83. How much do you put this sibling down? ..	1	2	3	4	5
84. How much do you feel proud of this sibling? .....	1	2	3	4	5
85. How much does this sibling feel proud of you? .....	1	2	3	4	5

86. Does this sibling think your mother is closer to him/her or you?

- (1) Our mother is usually closer to me  
 (2) Our mother is sometimes closer to me  
 (3) Our mother is equally close to both of us  
 (4) Our mother is sometimes closer to this sibling  
 (5) Our mother is usually closer to this sibling

87. Do you think your mother is closer to you or this sibling?

- \_\_\_ (1) Our mother is usually closer to me  
 \_\_\_ (2) Our mother is sometimes closer to me  
 \_\_\_ (3) Our mother is equally close to both of us  
 \_\_\_ (4) Our mother is sometimes closer to this sibling  
 \_\_\_ (5) Our mother is usually closer to this sibling

	1	2	3	4	5
	Hardly at All		Somewhat		Extremely Much
88. How much do you discuss important personal decisions with this sibling? . . . . .	1	2	3	4	5
89. How much does this sibling discuss important personal decisions with you? . . . . .	1	2	3	4	5
90. How much does this sibling try to perform better than you? . . . . .	1	2	3	4	5
91. How much do you try to perform better than this sibling? . . . . .	1	2	3	4	5
92. How likely is it you would go to this sibling if you needed financial assistance? . . . . .	1	2	3	4	5
93. How likely is it this sibling would go to you if he or she needed financial assistance? . . . . .	1	2	3	4	5
94. How much does this sibling act in superior ways to you? . . . . .	1	2	3	4	5
95. How much do you act in superior ways to this sibling? . . . . .	1	2	3	4	5
96. How much do you accept this sibling's ideas? . . . . .	1	2	3	4	5
97. How much does this sibling accept your ideas? . . . . .	1	2	3	4	5

98. Does this sibling think your father is closer to him/her or you?

- (1) Our father is usually closer to me  
 (2) Our father is sometimes closer to me  
 (3) Our father is equally close to both of us  
 (4) Our father is sometimes closer to this sibling  
 (5) Our father is usually closer to this sibling

99. Do you think your father is closer to you or this sibling?

- (1) Our father is usually closer to me  
 (2) Our father is sometimes closer to me  
 (3) Our father is equally close to both of us  
 (4) Our father is sometimes closer to this sibling  
 (5) Our father is usually closer to this sibling

	1	2	3	4	5
	Hardly at All		Somewhat		Extremely Much
100. How much do you know about this sibling's ideas? .....	1	2	3	4	5
101. How much does this sibling know about your ideas? .....	1	2	3	4	5
102. How much do you and this sibling lead similar lifestyles? .....	1	2	3	4	5

103. When you and your sibling have conflicts, how intense (on average) are they?

1	2	3	4	5	6	7
Not at all intense.						Extremely intense.
We agree to disagree						We fight hard

## Appendix B

### Brief College Hassles Scale

INSTRUCTIONS: This scale is designed to measure the “hassles” experienced by college students. Please use the following definition of hassles as a guide to responding to this scale.

“HASSLES ARE IRRITANTS THAT CAN RANGE FROM MINOR ANNOYANCES TO FAIRLY MAJOR PRESSURES, PROBLEMS, OR DIFFICULTIES. THEY CAN OCCUR FEW OR MANY TIMES.”

We are interested in identifying “hassles” in a number of different areas which are outlined below. We are further interested in determining the persistence of the various “hassles” that students report. Would you please use the scale below to appraise the extent to which you are hassled in each of the areas listed. Circle the appropriate number to the right of each item.

PERSISTENCE refers to the combination of the frequency and duration of a hassle. Some hassles may occur very frequently and last for a long time whereas others may occur rarely and not be very enduring. Various other combinations are possible.

1            2            3            4            5            6            7

No hassle:  
Not at all persistent

Extremely persistent  
hassle: High frequency  
and/or duration

For example, the first area listed is “Academic Deadlines.” Of course, all students have deadlines imposed on them but this is not necessarily a “hassles” to all students. If you are not at all hassled by such deadlines you should circle 1. However, if you perceive

academic deadlines to be an extremely persistent hassles -- one that occurs with a high frequency and/or duration then you should circle 7. Of course, if your appraisal is that you are actually hassled by such deadline but this hassle is not extremely persistent, then you should decide on the number between 2 and 6 the best represents your appraisal. Please follow this strategy in responding to all of the other areas listed below.

Please be certain to respond to every item

PERSISTENCE

1. ACADEMIC DEADLINES	1	2	3	4	5	6	7
2. CONTACT WITH GIRL/BOY FRIEND	1	2	3	4	5	6	7
3. FUTURE JOB PROSPECTS	1	2	3	4	5	6	7
4. RELATIONSHIPS WITH PEOPLE AT WORK	1	2	3	4	5	6	7
5. MONEY FOR NECESSARY EXPENSES	1	2	3	4	5	6	7
6. NOISE	1	2	3	4	5	6	7
7. ORGANIZATION OF TIME	1	2	3	4	5	6	7
8. WEIGHT	1	2	3	4	5	6	7
9. HOUSEHOLD CHORES	1	2	3	4	5	6	7
10. FAMILY EXPECTATIONS	1	2	3	4	5	6	7
11. RELATIONSHIP WITH MOTHER AND/ OR FATHER	1	2	3	4	5	6	7
12. ACADEMIC BUREAUCRACY ("Red Tape")	1	2	3	4	5	6	7
13. PREPARING MEALS	1	2	3	4	5	6	7
14. EXERCISE	1	2	3	4	5	6	7
15. OWING MONEY	1	2	3	4	5	6	7



16. JOB SATISFACTION	1	2	3	4	5	6	7
17. FINANCIAL SECURITY	1	2	3	4	5	6	7
18. RELATIONSHIP WITH GIRL/BOY FRIEND	1	2	3	4	5	6	7
19. RELATIONSHIP WITH BROTHER AND/OR SISTER	1	2	3	4	5	6	7
20. COLLEGE PROGRAM REQUIREMENTS	1	2	3	4	5	6	7

## Appendix C

Coopersmith Self-Esteem

The following questions require you to indicate how you feel about yourself. If a statement describes how you usually feel, put a check on the line under the column "Like Me." If a statement does not describe how you usually feel, put a check on the line under the column "Unlike Me." There are no right or wrong answers. Begin at the top of the page and mark all of the statements.

**Like    Unlike**  
**Me    Me**

- |     |     |   |
|-----|-----|---|
| ___ | ___ | 1. Things usually don't bother me.                              |
| ___ | ___ | 2. I find it very hard to talk in front of a group.             |
| ___ | ___ | 3. There are lots of things about myself I'd change if I could. |
| ___ | ___ | 4. I can make up my mind without too much trouble.              |
| ___ | ___ | 5. I'm a lot of fun to be with.                                 |
| ___ | ___ | 6. I get upset easily at home.                                  |
| ___ | ___ | 7. It takes me a long time to get used to anything new.         |
| ___ | ___ | 8. I'm popular with persons my own age.                         |
| ___ | ___ | 9. My family usually considers my feelings.                     |
| ___ | ___ | 10. I give in very easily.                                      |
| ___ | ___ | 11. My family expects too much of me.                           |
| ___ | ___ | 12. It's pretty tough to be me.                                 |
| ___ | ___ | 13. Things are all mixed up in my life.                         |
| ___ | ___ | 14. People usually follow my ideas.                             |

- \_\_\_ \_\_\_ 15. I have a low opinion of myself.
- \_\_\_ \_\_\_ 16. There are many times when I would like to leave home.
- \_\_\_ \_\_\_ 17. I often feel upset with my work.
- \_\_\_ \_\_\_ 18. I'm not as nice looking as most people.
- \_\_\_ \_\_\_ 19. If I have something to say, I usually say it.
- \_\_\_ \_\_\_ 20. My family understands me.
- \_\_\_ \_\_\_ 21. Most people are better liked than I am.
- \_\_\_ \_\_\_ 22. I usually feel as if my family is pushing me.
- \_\_\_ \_\_\_ 23. I often get discouraged with what I am doing.
- \_\_\_ \_\_\_ 24. I often wish I were someone else.
- \_\_\_ \_\_\_ 25. I can't be depended on.

## Appendix D

Social Support Questionnaire

The following questions ask about people in your environment who provide you with help or support. Each question has two parts. For the first part, list all the people you know, excluding yourself, whom you can count on for help or support in the manner you described. Give the person's initials and their relationship to you (see example). Do not list more than one person next to each of the numbers beneath the question.

For the second part, circle how satisfied you are with the overall support you have. If you have no support for a question, check the words "no one," but still rate your level of satisfaction. Do not list more than nine persons per question.

**EXAMPLE:** Who do you know whom you can trust with information that could get you in trouble?

No one	_____	) T.N. (brother)	4) T.N. (father)	7)
		2) L.M. (friend)	5) L.M. (employer)	8)
		3) R.S. (friend)	6)	9)

HOW SATISFIED?

VERY  
SATISFIED

VERY  
DISSATISFIED

6

5

4

3

2

1

**1. Whom can you really count on to distract you from your worries when you feel under stress?**

No one \_\_\_\_\_ 1) \_\_\_\_\_ 4) \_\_\_\_\_ 7) \_\_\_\_\_  
 2) \_\_\_\_\_ 5) \_\_\_\_\_ 8) \_\_\_\_\_  
 3) \_\_\_\_\_ 6) \_\_\_\_\_ 9) \_\_\_\_\_

**HOW SATISFIED?**

VERY  
SATISFIED

VERY  
DISSATISFIED

6            5            4            3            2            1

**2. Whom can you really count on to help you feel more relaxed when you are under pressure or tense?**

No one \_\_\_\_\_ 1) \_\_\_\_\_ 4) \_\_\_\_\_ 7) \_\_\_\_\_  
 2) \_\_\_\_\_ 5) \_\_\_\_\_ 8) \_\_\_\_\_  
 3) \_\_\_\_\_ 6) \_\_\_\_\_ 9) \_\_\_\_\_

**HOW SATISFIED?**

VERY  
SATISFIED

VERY  
DISSATISFIED

6            5            4            3            2            1

**3. Who accepts you totally, including both your worst and your best points?**

No one \_\_\_\_\_ 1) \_\_\_\_\_ 4) \_\_\_\_\_ 7) \_\_\_\_\_  
 2) \_\_\_\_\_ 5) \_\_\_\_\_ 8) \_\_\_\_\_  
 3) \_\_\_\_\_ 6) \_\_\_\_\_ 9) \_\_\_\_\_

**HOW SATISFIED?**

VERY  
SATISFIED

VERY  
DISSATISFIED

6            5            4            3            2            1

**4. Whom can you really count on to care about you, regardless of what is happening to you?**

No one \_\_\_\_\_ 1) \_\_\_\_\_ 4) \_\_\_\_\_ 7) \_\_\_\_\_  
 2) \_\_\_\_\_ 5) \_\_\_\_\_ 8) \_\_\_\_\_  
 3) \_\_\_\_\_ 6) \_\_\_\_\_ 9) \_\_\_\_\_

**HOW SATISFIED?**

VERY  
SATISFIED

VERY  
DISSATISFIED

6            5            4            3            2            1

**5. Whom can you really count on to help you feel better when you are feeling generally down-in-the-dumps?**

No one \_\_\_\_\_ 1) \_\_\_\_\_ 4) \_\_\_\_\_ 7) \_\_\_\_\_  
 2) \_\_\_\_\_ 5) \_\_\_\_\_ 8) \_\_\_\_\_  
 3) \_\_\_\_\_ 6) \_\_\_\_\_ 9) \_\_\_\_\_

**HOW SATISFIED?**

VERY  
SATISFIED

VERY  
DISSATISFIED

6            5            4            3            2            1

**6. Whom can you count on to console you when you are very upset?**

No one \_\_\_\_\_ 1) \_\_\_\_\_ 4) \_\_\_\_\_ 7) \_\_\_\_\_  
2) \_\_\_\_\_ 5) \_\_\_\_\_ 8) \_\_\_\_\_  
3) \_\_\_\_\_ 6) \_\_\_\_\_ 9) \_\_\_\_\_

**HOW SATISFIED?**VERY  
SATISFIEDVERY  
DISSATISFIED

6            5            4            3            2            1

## Appendix E

Coping Responses Inventory

This next set of questions ask you to think about a specific situation. Please think about the most important problem or stressful situation you experienced due to your sibling or involving a conflict with your sibling, DURING THE LAST 12 MONTHS. Briefly describe the problem in the space provided below. If you have not experienced a major problem, list a minor problem that you have had with your sibling.

1. Describe the situation or problem \_\_\_\_\_

\_\_\_\_\_

2. How long did the problem last? (days, months) \_\_\_\_\_

3.(a) How upsetting did you find the problem or situation? (circle a number on the following scale that reflects how you felt)

1	2	3	4	5	6	7
Not at all Upsetting			Moderately Upsetting			Extremely Upsetting

(b) To what degree do you perceive this situation as having an impact on your life currently?

1	2	3	4	5	6	7
No impact						Great Impact

(c) To what degree do you perceive uncertainty about this situation currently?

1	2	3	4	5	6	7
Not at all Uncertain						Extremely Uncertain

(d) To what degree do you believe that you have control over or can change the situation?

1	2	3	4	5	6	7
No Control						Complete Control



PART I

Please answer the following questions about the problem you have just described. Circle the number that best answers the question.

	Definitely No	Mainly No	Mainly Yes	Definitely Yes
4. Have you ever faced a problem like this before? .	1	2	3	4
5. Did you know this problem was going to occur?	1	2	3	4
6. Did you have enough time to get ready to handle this problem? . . . . .	1	2	3	4
7. When this problem occurred, did you think of it as a threat? . . . . .	1	2	3	4
8. When this problem occurred, did you think of it as a challenge? . . . . .	1	2	3	4
9. Was this problem caused by something you did?	1	2	3	4
10. Was this problem caused by something someone else did? . . . . .	1	2	3	4
11. Did anything good come out of dealing with this problem? . . . . .	1	2	3	4
12. Has this problem or situation been resolved? . .	1	2	3	4
13. If the problem has been worked out, did it turn out all right for you? . . . . .	1	2	3	4 n/a

**PART II**

Please think again about the problem you described. Indicate which of the following you did in connection with that situation.

<b><u>DID YOU:</u></b>	No	Yes, Once or twice	Yes, some- times	Yes, fairly often
14. think of different ways to deal with the problem?	1	2	3	4
15. tell yourself things to make yourself feel better? .	1	2	3	4
16. talk with a relative or spouse about the problem?	1	2	3	4
17. make a plan of action and follow it? . . . . .	1	2	3	4
18. try to forget the whole thing? . . . . .	1	2	3	4
19. feel that time would make a difference -- the only thing to do was wait? . . . . .	1	2	3	4
20. try to help others deal with a similar problem? . . .	1	2	3	4
21. take it out on other people when you felt angry or depressed? . . . . .	1	2	3	4
22. try to step back from the situation and be more objective? . . . . .	1	2	3	4
23. remind yourself how much worse things could be? . . . . .	1	2	3	4
24. talk with a friend about the problem? . . . . .	1	2	3	4
25. know what had to be done and try hard to make things work? . . . . .	1	2	3	4
26. try not to think about the problem? . . . . .	1	2	3	4
27. realize that you had no control over the problem?	1	2	3	4
28. get involved in new activities? . . . . .	1	2	3	4
29. take a chance and do something risky? . . . . .	1	2	3	4
30. go over in your mind what you would say or do?	1	2	3	4

<u>DID YOU:</u>	No	Yes, Once or twice	Yes, some- times	Yes, fairly often
31. try to see the good side of the situation? . . . . .	1	2	3	4
32. talk with a professional person (e.g., doctor, lawyer, clergy)? . . . . .	1	2	3	4
33. decide what you wanted and try hard to get it? . .	1	2	3	4
34. daydream or imagine a better time or place than the one you were in? . . . . .	1	2	3	4
35. think that the outcome would be decided by fate?	1	2	3	4
36. try to make new friends? . . . . .	1	2	3	4
37. keep away from people in general? . . . . .	1	2	3	4
38. try to anticipate how things would turn out? . . . .	1	2	3	4
39. think about how you were much better off than other people with similar problems? . . . . .	1	2	3	4
40. seek help from persons or groups with the same type or problem? . . . . .	1	2	3	4
41. try at least two different ways to solve the problem? . . . . .	1	2	3	4
42. try to put off thinking about the situation, even though you knew you have to at some point? . . . . .	1	2	3	4
43. accept it; nothing could be done? . . . . .	1	2	3	4
44. read more often as a source of enjoyment? . . . . .	1	2	3	4
45. yell or shout to let off steam? . . . . .	1	2	3	4
46. try to find some personal meaning in the situation? . . . . .	1	2	3	4
47. try to tell yourself that things would get better? . .	1	2	3	4

<u>DID YOU:</u>	No	Yes, Once or twice	Yes, some- times	Yes, fairly often
48. try to find out more about the situation? . . . . .	1	2	3	4
49. try to learn to do more things on your own? . . . . .	1	2	3	4
50. wish the problem would go away or somehow be over with? . . . . .	1	2	3	4
51. expect the worst possible outcome? . . . . .	1	2	3	4
52. spend more time in recreational activities? . . . . .	1	2	3	4
53. cry to let your feelings out? . . . . .	1	2	3	4
54. try to anticipate the new demands that would be placed on you? . . . . .	1	2	3	4
55. think about how this event could change your life in a positive way? . . . . .	1	2	3	4
56. pray for guidance and/or strength? . . . . .	1	2	3	4
57. take things a day at a time, one step at a time? . .	1	2	3	4
58. try to deny how serious the problem really was? .	1	2	3	4
59. lose hope that things would ever be the same? . .	1	2	3	4
60. turn to work or other activities to help you manage things? . . . . .	1	2	3	4
61. do something that you didn't think would work, but at least you were doing something? . . . . .	1	2	3	4

## Appendix F

Profile Of Mood States

Below is a list of words that describe feelings people have. Please read each one carefully.

Then circle ONE number under the answer to the right which best describes HOW YOU HAVE BEEN FEELING DURING THE PAST FEW DAYS INCLUDING TODAY.

Use the following scale when answering how you have felt lately.

0 = Not at all  
 1 = A little  
 2 = Moderately  
 3 = Quite a bit  
 4 = Extremely

1	Friendly	0	1	2	3	4	21	Hopeless	0	1	2	3	4
2	Tense	0	1	2	3	4	22	Relaxed	0	1	2	3	4
3	Angry	0	1	2	3	4	23	Unworthy	0	1	2	3	4
4	Worn out	0	1	2	3	4	24	Spiteful	0	1	2	3	4
5	Unhappy	0	1	2	3	4	25	Sympathetic	0	1	2	3	4
6	Clear-headed	0	1	2	3	4	26	Uneasy	0	1	2	3	4
7	Lively	0	1	2	3	4	27	Restless	0	1	2	3	4
8	Confused	0	1	2	3	4	28	Unable to concentrate	0	1	2	3	4
9	Sorry for things done	0	1	2	3	4	29	Fatigued	0	1	2	3	4
10	Shaky	0	1	2	3	4	30	Helpful	0	1	2	3	4
11	Listless	0	1	2	3	4	31	Annoyed	0	1	2	3	4
12	Peeved	0	1	2	3	4	32	Discourage	0	1	2	3	4
13	Considerate	0	1	2	3	4	33	Resentful	0	1	2	3	4
14	Sad	0	1	2	3	4	34	Nervous	0	1	2	3	4
15	Active	0	1	2	3	4	35	Lonely	0	1	2	3	4
16	On edge	0	1	2	3	4	36	Miserable	0	1	2	3	4
17	Grouchy	0	1	2	3	4	37	Muddled	0	1	2	3	4
18	Blue	0	1	2	3	4	38	Cheerful	0	1	2	3	4
19	Energetic	0	1	2	3	4	39	Bitter	0	1	2	3	4
20	Panicky	0	1	2	3	4	40	Exhausted	0	1	2	3	4

0 = Not at all  
 1 = A little  
 2 = Moderately  
 3 = Quite a bit  
 4 = Extremely

41	Anxious	0	1	2	3	4	54	Efficient	0	1	2	3	4
42	Ready to fight	0	1	2	3	4	55	Trusting	0	1	2	3	4
43	Good natured	0	1	2	3	4	56	Full of pep	0	1	2	3	4
44	Gloomy	0	1	2	3	4	57	Bad-tempered	0	1	2	3	4
45	Desperate	0	1	2	3	4	58	Worthless	0	1	2	3	4
46	Sluggish	0	1	2	3	4	59	Forgetful	0	1	2	3	4
47	Rebellious	0	1	2	3	4	60	Carefree	0	1	2	3	4
48	Helpless	0	1	2	3	4	61	Terrified	0	1	2	3	4
49	Weary	0	1	2	3	4	62	Guilty	0	1	2	3	4
50	Bewildered	0	1	2	3	4	63	Vigorous	0	1	2	3	4
51	Alert	0	1	2	3	4	64	Uncertain about things	0	1	2	3	4
52	Deceived	0	1	2	3	4	65	Bushed	0	1	2	3	4
53	Furious	0	1	2	3	4							

MAKE SURE THAT YOU HAVE ANSWERED EVERY ITEM.

## Appendix G

Wahler Physical Symptom Inventory**What you are to do:**

Below is a list of physical troubles. Please indicate how often each of these bothers you. Do this by circling the number to the right of each trouble which shows how often you are bothered by that trouble. Keep in mind that the LARGER the number the MORE OFTEN the trouble bothers you. Please DO NOT SKIP any troubles. You may take as much time as is necessary.

0 = Almost Never  
 1 = About Once a Year  
 2 = About Once a Month  
 3 = About Once a Week  
 4 = About Twice a Week  
 5 = Nearly Every Day

1	Nausea (Feeling like throwing up)	0 1 2 3 4 5	22	Paralysis (unable to move parts of the body)	0 1 2 3 4 5
2	Headaches	0 1 2 3 4 5	23	trouble with eyes or vision	0 1 2 3 4 5
3	Trouble with ears or hearing	0 1 2 3 4 5	24	burning, tingling or crawling feelings in the skin	0 1 2 3 4 5
4	Neck aches or pains	0 1 2 3 4 5	25	Skin trouble (rashes, boils, or itching)	0 1 2 3 4 5
5	Feeling hot or cold regardless of the weather	0 1 2 3 4 5	26	Feeling tired	0 1 2 3 4 5
6	Arm or leg aches or pains	0 1 2 3 4 5	27	Muscular weakness	0 1 2 3 4 5
7	Shakiness	0 1 2 3 4 5	28	Dizzy spells	0 1 2 3 4 5
8	Swelling of arms, hands, legs, or feet	0 1 2 3 4 5	29	Muscular tensions	0 1 2 3 4 5
9	Stuttering or stammering	0 1 2 3 4 5	30	Any trouble with the senses of taste or smell	0 1 2 3 4 5
10	Difficulty sleeping	0 1 2 3 4 5	31	Difficulty breathing (short of breath, asthma, etc.)	0 1 2 3 4 5
11	Losing weight	0 1 2 3 4 5	32	Twitching muscles	0 1 2 3 4 5
12	Backaches	0 1 2 3 4 5	33	Poor health in general	0 1 2 3 4 5
13	Intestinal or stomach trouble	0 1 2 3 4 5	34	Excessive gas	0 1 2 3 4 5
14	Difficulty with urination (passing water)	0 1 2 3 4 5	35	Difficulty swallowing	0 1 2 3 4 5
15	Heart trouble	0 1 2 3 4 5	36	Seizures (convulsions or fits)	0 1 2 3 4 5
16	Trouble with teeth	0 1 2 3 4 5	37	Gaining weight	0 1 2 3 4 5
17	Numbness, or lack of feeling in any part of the body	0 1 2 3 4 5	38	Difficulty with appetite	0 1 2 3 4 5

18	Aches or pains in hands or feet	0	1	2	3	4	5	39	Bowel trouble (constipation or loose bowels)	0	1	2	3	4	5
19	Fainting spells	0	1	2	3	4	5	40	Vomiting	0	1	2	3	4	5
20	Excessive perspiration	0	1	2	3	4	5	41	Chest pains	0	1	2	3	4	5
21	Abnormal blood pressure	0	1	2	3	4	5	42	Hay fever or other allergies	0	1	2	3	4	5

Please write down any important physical symptoms not listed above which trouble you:

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## Appendix H

Consent Form

Thank-you for your interest in this study, being conducted out of the University of Manitoba, investigating sibling relationship experiences. If you agree to participate, you will respond to items on a questionnaire that ask you about your sibling relationship and about yourself. The questionnaire will take approximately one hour to complete. Take your time and think about your responses to the questions.

Your participation in this study is voluntary and you are free to not answer any questions you do not wish to answer. All of the information that you provide will be kept confidential and anonymous. The questionnaires are coded by participant number, not by your name. If at any time you do not wish to continue participating, you are free to stop.

---

Your signature indicates that you have read the above statement and have given your informed consent to participate in this study.

\_\_\_\_\_  
Your Signature

\_\_\_\_\_  
Date

\_\_\_\_\_  
Printed Name

## Appendix I

Demographic Questions

**Lastly, here are a few questions about your family.**

1. What is your work situation at the present time? Please indicate whether any of the following apply to you. (answer all of the following by placing a check on the line for "no" or "yes").

- |     |     |  |
|-----|-----|--|
| (0) | (1) |  |
| no  | yes |  |
| ___ | ___ | (a) Employed full time                     |
| ___ | ___ | (b) Employed part time                     |
| ___ | ___ | (c) Unemployed, looking for employment     |
| ___ | ___ | (d) Unemployed, not looking for employment |
| ___ | ___ | (e) Retired                                |
| ___ | ___ | (f) In school                              |
| ___ | ___ | (g) Maintaining a house                    |
| ___ | ___ | (h) Doing some type of volunteer work      |

2. Looking at the following list, what is the highest level of education that you and your sibling have completed? (circle the number that corresponds with the highest level of education).

**You      Your Sibling**

- 01 ..... 01 ..... No Schooling  
 02 ..... 02 ..... Elementary School  
 03 ..... 03 ..... Junior High School

High School or GED

- 04 ..... 04 ..... Complete  
 05 ..... 05 ..... Incomplete

Non-University (College, Vocational/Technical, Nursing School, etc.)

- 06 ..... 06 ..... Complete  
 07 ..... 07 ..... Incomplete

University

- 08 ..... 08 ..... Incomplete  
 09 ..... 09 ..... Diploma or Certificate (Hygienists, Continuing education)  
 10 ..... 10 ..... Bachelor's Degree  
 11 ..... 11 ..... Medical Degree  
 12 ..... 12 ..... Master's Degree  
 13 ..... 13 ..... Doctorate Degree  
 98 ..... 98 ..... Don't know

3. Indicate your current family type (check the most appropriate response)

- (1) Parent never married  
 (2) Parents currently married  
 (3) Parents separated  
 (4) Parents divorced, not re-married  
 (5) One or both parent(s) re-married  
 (6) Parent widowed  
 (7) Other (please explain): \_\_\_\_\_

4. Please indicate your family background below. If more than one applies, please indicate which percentage of each best describes you:

- | %     | Background                       |
|-------|----------------------------------|
| _____ | (1) Aboriginal                   |
| _____ | (2) African-Canadian             |
| _____ | (3) Asian / Pacific Islander     |
| _____ | (4) Caucasian / European         |
| _____ | (5) East Indian                  |
| _____ | (6) Latino                       |
| _____ | (7) Other (please specify) _____ |

**Lastly, there are a few questions about personal finances. We ask these questions because they are important to the goals of this research. All of the information will be kept confidential.**

5. Would you say that you (and members of your household) are financially better off, just the same, or worse off now than you were a year ago?

- (1) Better off now  
 (2) Just the same now  
 (3) Worse off now  
 (8) Don't know

6. Looking ahead, do you think that a year from now you (and your household) will be financially better off, just the same, or worse off than now?

- (1) Will be better off  
 (2) Will be just the same  
 (3) Will be worse off  
 (8) Don't know

7. Looking at the scale below, which number comes closest to the total income for this past year, before tax and deductions, off **all members** living in your household?

No income . . . . .	00		
Under \$6,000 . . . . .	01	32,000 - 33,999 . . . . .	15
6,000 - 7,999 . . . . .	02	34,000 - 35,999 . . . . .	16
8,000 - 9,999 . . . . .	03	36,000 - 37,999 . . . . .	17
10,000 - 11,999 . . . . .	04	38,000 - 39,999 . . . . .	18
12,000 - 13,999 . . . . .	05	40,000 - 44,999 . . . . .	19
14,000 - 15,999 . . . . .	06	45,000 - 49,999 . . . . .	20
16,000 - 17,999 . . . . .	07	45,000 - 54,999 . . . . .	21
18,000 - 19,999 . . . . .	08	50,000 - 59,999 . . . . .	22
20,000 - 21,999 . . . . .	09	55,000 - 64,999 . . . . .	23
22,000 - 23,999 . . . . .	10	60,000 - 69,999 . . . . .	24
24,000 - 25,999 . . . . .	11	70,000 - 74,999 . . . . .	25
26,000 - 27,999 . . . . .	12	75,000 - 79,999 . . . . .	26
28,000 - 29,999 . . . . .	13	80,000 + . . . . .	27
30,000 - 33,999 . . . . .	14	Do not know . . . . .	98

**Do you have any concerns about your sibling relationship that were not addressed in the study but which you believe are important? If so, please use the space below to explain.**

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## Appendix J

### Debriefing Sheet

#### *Thank-you for participating in this study of sibling relationships.*

This study was interested in how sibling conflict relates to stress. I used a theory of the stress process to investigate the relationship of sibling conflict to psychological distress. You were asked a variety of questions about yourself, your sibling relationship, and how you coped with a certain situation. Your responses were very important for this research. I proposed that sibling conflict and daily hassles (i.e., everyday things that are a hassle) are related positively to psychological distress (remember correlational analysis?). That is, I thought that higher amounts of sibling conflict would be related to experiencing higher levels of psychological distress. Also, I hypothesized that daily hassles would be related to psychological distress the same way as sibling conflict. These two independent variables, sibling conflict and daily hassles, are thought of as demands placed on a person. If a person does not have a lot of resources and is experiencing a lot of demands, it is likely that they will experience psychological distress. But, if a person does have resources to fall back on -- in this study resources are considered to be self-esteem, social support, and coping strategies -- it is likely that they will be able to deal with their demands and not experience distress. Therefore, there were 5 independent variables in the study: (a) sibling conflict, (b) daily hassles, (c) self-esteem, (d) social support, and (e) coping strategies. The dependent variable was the amount of psychological distress.

Basically, I am investigating how each of the 5 independent variables relate to the dependent variable, psychological distress. I will also investigate which of the 5 independent variables are most important for predicting psychological distress. For

example, is sibling conflict a really important factor that predicts psychological distress or is it less important than other factors. I will use the information that I obtain from this research to develop a program of research for the future. I hope to investigate the stress process as it relates to siblings who have a brother or sister that suffers from a mental disorder and compare it to the data from this study. I will also use the information that I gain from this study to fine tune my theory of the stress process.

If you have any questions about this study please contact the researcher, Kelly Hutton, through the psychology department general office.

Feedback will be provided on the results of this study once they are obtained and analyzed. This feedback will be posted outside the Fletcher Argue lecture theatres. This feedback should be posted in early February.