To the Graduate Council:

I am submitting herewith a thesis written by Rachel L. Anderson entitled "The Relationship of Hostility, Coping Strategies, and Social Support with Cardiovascular Reactions to an Acute Laboratory Stressor." I have examined the final copy of this thesis for form and content and recommend that it be accepted in partial fulfillment of the requirements for the degree of Master of Arts, with a major in Psychology.

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THE RELATIONSHIP OF HOSTILITY, COPING STRATEGIES, AND SOCIAL SUPPORT WITH CARDIOVASCULAR REACTIONS TO AN ACUTE LABORATORY STRESSOR

A Thesis

Presented for the

Master of Arts

Degree

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Rachel L. Anderson

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DEDICATION

This thesis is dedicated to my parents, David and Kathleen Anderson, who have lovingly and patiently supported me throughout my lifetime. Through their generosity and love, I have been given the gift of an education and the opportunity to explore further my goals and aspirations.

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ABSTRACT

The effect of social support on cardiovascular reactivity during an acute laboratory stressor was examined in groups of high and low hostile women. Ninety females participated in 2 discussion stressors with a disagreeing confederate. During one discussion they received support from the moderator, while in the second discussion they received no support. Low hostile women exhibited higher overall systolic blood pressure and heart rate reactivity during the task than high hostile women. In addition, reported method of coping with stress interacted with hostility and social support as reflected in heart rate and blood pressure reactivity. Low hostile women who reported coping through social support displayed higher heart rate reactivity in the no support condition than in the support condition. A lack of social support may be damaging to low hostile women who report coping with life stress by seeking support from others. Also, low hostile women who reported not coping with stress through seeking social support had higher systolic and diastolic blood pressure reactivity when support was given than when support was not given. Thus, social support increases blood pressure during a stressful situation for those women who do not cope with stress by seeking social support from others. Social coping styles and social support did not affect the reactivity of high hostile women. The emerging complexities of social support's effect on cardiovascular health are discussed. Also, the influences of hostility on women's cardiovascular reactions to an interpersonal task are discussed.

TABLE OF CONTENTS

CHAPTER PAGE

CHAPTER PAGE

LIST OF TABLES

LIST OF FIGURES

CHAPTER 1

INTRODUCTION

Social Support

Social support has been defined as persons, behaviors, relationships, or social systems leading an individual to believe that he is esteemed, valued, and cared for as a member of a network of mutual obligations (Cobb, 1976; Veiel & Baumann, 1992). The effects of social support on the individual in reducing stress and maintaining good health have been noted for many years. Charles Darwin (1872-1965) once commented on one of his father's patients who was suffering from heart disease (resulting in an irregular heart rate). The positive effect of social relationships on health is reflected in Darwin's remark that this patient's pulse "invariably became regular as soon as my father entered the room" (Sarason et al, 1990, p. 10). Social relationships were also studied by Emile Durkheim (1897-1957) as they influenced suicide attempts. In this early research it was found that an individual's probability of suicide increased as this person's number of social relationships decreased (Sarason et al, 1990).

In addition to early observations by Darwin and Durkheim, the effects of social support on health were examined in two papers by Cobb (1976) and Cassel (1976). Among the first to explore the relationship between social relationships and health, Cassel (1976) reported the importance of the social environment in affecting susceptibility to environmental disease agents, recognizing the importance of strengthening one's social support in the prevention of disease. He asserted that incidence of tuberculosis, schizophrenia, multiple accidents, and suicide are associated with a lack of social relations.

Cobb (1976) also reported on the protective quality of social support. He asserted that social support provided protection from pathological states, accelerated individuals' recovery from illness, and enhanced patient compliance with medical instructions.

The influence of social support on health has been the focus of many recent studies. Numerous studies of individuals suffering from physical illness indicate that the support of family members, spouses, friends, and others can contribute to lower mortality, a more rapid recovery, greater adaptation to disease, and increased compliance with prescribed medical regimens (Berkman, 1995; Cohen & Wills, 1985; Gore, 1985; Sarason et al, 1990; Veiel & Baumann, 1992). For example, Veiel and Baumann (1992) found that marriage was beneficial to physical well being and health. They discovered lower incidence of tuberculosis, heart attacks, strokes, cirrhosis, and lung cancer in married individuals than in unmarried individuals. Berkman (1995) also supported this correlation between mortality and social support in her study of 1368 people suffering from coronary artery disease. These patients were undergoing cardiac catheterization between 1974 and 1980 and were examined until their deaths. Men and women, who were unmarried or without a significant other, were three times as likely to die within five years than those with a confidant.

While the previous studies reflect the benefits of marital relationships, social support extends beyond marriage partnerships. In the Alameda County Population Monitoring Study, the measure of an individual's social support network included the number of close family and friends, church membership, group affiliation, as well as marital status. This study demonstrated that someone's social network can be an accurate predictor of longevity. Their results indicated that men with weak social networks were

approximately 2.5 times more likely to die than men with strong social support networks. Women appeared to benefit even more from social networks than men (Sarason et al, 1990).

The preceding research provides evidence for the relationship between social support and mortality. Health, however, is a much broader concept than mortality. The World Health Organization defines health as "a complete state of physical, social, and mental well-being, which includes absence of disability, freedom from symptoms, and a general state of wellness" (Sarason et al, 1990, p. 429). Therefore, the above studies, while displaying a correlation between social support and mortality, only address the effects of social support on one component of health.

The influence of an individual's social support network on his/her psychological and social well-being, another aspect of health, can be seen in a study by Davidson, Bowden, and Tholen (1979). They found that burn victims with support from family and friends experienced a higher general life satisfaction and higher self esteem than victims without a supportive network. Dimond (1979) also found a correlation between social support and psychological health in people suffering from kidney disease. Those patients with supportive spouses and families had higher morale and fewer changes in social functioning than those without support. Concerning people diagnosed with cancer, David Sobel (1995) asserts that "there is little doubt that psychosocial support groups for patients with cancer can reduce emotional distress and pain and enhance coping and quality of life" (Sobel, 1995, p. 234).

Theories on Benefits of Social Support

Why does social support provide this psychological, social, and physical defense against disease? Cohen and Wills (1985) offer two answers to this question with their main effect and stress buffering hypotheses. According to the main effect hypothesis, "a general beneficial effect of social support could occur because large social networks provide persons with regular positive experiences and a set of stable, socially rewarded roles in the community" (p. 311). Such involvement in a social network helps one avoid the negative experiences that would otherwise accompany a physical illness, such as financial burdens and legal problems, and promotes positive experiences by looking after each other and insuring that physician's orders are followed.

An alternate hypothesis proposed by Cohen and Wills suggests that social support serves as a buffer to stress. Stress is defined as "arising when one appraises a situation as threatening or otherwise demanding and does not have an appropriate coping response" (p. 312). Stress strains the individual's problem solving and coping ability, disrupts immune system functioning, and leads to other maladaptive behaviors such as alcohol abuse and poor health habits. In this stress buffering hypothesis, it is asserted that social support can alleviate many of the disruptions in the individual caused by stress.

Social Support and Cardiovascular Health

The influence of one's social environment on health has been much studied, especially within the realm of cardiovascular health. When examining cardiovascular health, a lack of social support is associated with an increase in an individual's risk for coronary related deaths (House, Landis, & Umberson, 1988; Cohen, Kaplan, & Manuck,

1994). In those at risk for cardiovascular disorders, social support has also been associated with attending more medical appointments, declines in hypertension, and greater overall reduction in diastolic blood pressure (Uchino, Cacioppo, & Kiecolt-Glaser, 1996). Everyday cardiovascular responses were monitored by Unden, Orth-Gomer, and Elofsson (1991) in their study in which participants' cardiovascular measurements were recorded during a 24 hour period. Mean heart rates were found to be higher in persons reporting low social support. Similarly, Linden, Chambers, Maurice, & Lenz (1993) monitored individuals' cardiovascular response every 20 minutes during a normal day. They found that high levels of social support were associated with low levels of ambulatory systolic blood pressure.

Many recent studies have focused on individuals, their personalities, and their levels of social support before the development of coronary heart disease. It has been suggested that the development of cardiovascular disorders may be predicted through laboratory reactivity studies, with those who are at risk for cardiovascular disorders displaying the most reactivity to laboratory stressors. Thus, many of the recent research studies have been experimental, laboratory studies in which individuals are compared on their reactivity to acute stressors (see review by Uchino, Cacioppo & Kiecolt-Glaser, 1996). In one study, women who had a friend present during an experiment had smaller increases in heart rate and systolic blood pressure during both a mental arithmetic task and a concept formation task than women who did not have a friend present (Kamarck, Manuck, & Jennings, 1990). Lepore, Allen, and Evans (1993) also found that support lessened reactivity during an acute stressor. They found that when individuals were asked to give a speech, participants had smaller increases in blood pressure when a supportive

confederate was present than when they gave it alone or in the presence of an non-supportive confederate. Gerin, Pieper, Levy, and Pickering (1992) studied cardiovascular responses by placing their participants in a social antagonism setting. During this stressor, participants were asked to discuss a controversial topic, during which their views were constantly attacked by confederates in the study. These participants were less reactive during this activity when they received support for their position from an additional confederate than when they did not receive support. Gerin, Milner, Chawla, and Pickering (1995) further explored the above influence of social support by placing participants in a situation of high stress or low stress with a supportive friend present or no support present. Participants were less reactive in the support condition during periods of high stress, but not during periods of low stress. This interaction of stress level and support seems to suggest that support is most effective in extremely stressful situations. Kamarck, Annuniziato, and Amateau (1995) also examined affiliation during situations of high social threat and low social threat. They found that affiliation reduced reactivity to two tasks (Stroop color word task and mental arithmetic task) only when these tasks were presented with evaluative instructions from a highly threatening experimenter of high status. When the experimenter and instructions were non-threatening, affiliation seemed to have no effect on reactivity. A recent study by Uchino and Garvey (1997) supports the previous claims that social support moderates cardiovascular reactions to an acute stressor. While other studies have examined actual support, Uchino and Garvey examined available support. They found that merely having support available, if needed, reduced reactivity while performing a speech.

Differential Effects of Social Support

While most research on cardiovascular reactivity to laboratory stressors seems to be fairly consistent, with agreement that social support is beneficial, a recent study indicates that social support does not benefit all individuals. Lepore (1995) found an interactive effect of social support and cynical hostility on cardiovascular reactivity. Those participants who were low in cynical hostility had smaller increases in diastolic and systolic blood pressure to the stressor when they received support. Support did not lower reactivity, however, for highly cynical participants. Lepore suggests that cynically hostile attitudes may undermine the benefits of social support.

This inclusion of cynical hostility as a variable affecting cardiovascular functioning is not recent. Both social support and hostility are among the most studied factors in cardiovascular research. Excessive hostility appears to increase an individual's risk for coronary related illness and death (Barefoot, Dahlstrom, & Williams, 1983; House, Landis, & Umberson, 1988; Shekelle, Gale, Ostfeld, & Paul, 1983). Linden, Chambers, Maurice, & Lenz (1993) studied the average working day of men and women and their ambulatory blood pressure. They found that hostility level contributed to increased DBP for men. Houston, Smith, & Cates (1989) found that hostile people experienced exaggerated cardiovascular reactivity during a mental arithmetic task and a Stroop color word task. Also, during interpersonal tasks, hostility is often associated with greater reactivity. Smith and Brown (1991) found higher blood pressure in high hostile men than in low hostile men when engaging in a social influence task with their wives. Smith and Allred (1989) found that high hostile men displayed higher SBP and DBP than low hostile men when discussing a current topic with a male partner. Helmers and Krantz (1996) also

found higher SBP and DBP in high hostile men and women than in low hostile participants during a speech task. Suarez and Williams (1989) found that high hostile males displayed greater SBP and DBP than low hostile males during an anagram test. Suarez, Harlan, Peoples, & Williams (1993) found high hostile women had greater SBP reactivity than low hostile women during harassment.

While both social support and hostility have been studied in relation to coronary functioning, there are very few studies combining their influence. Thus, the study by Lepore is one of the first to identify cynical hostility as diminishing the effects of social support on cardiovascular reactivity. The present study will attempt to replicate Lepore's results by also concentrating on hostility level and social support.

Also, many studies investigating the influence of hostility on cardiovascular reactions have focused on male subjects only or have found inconsistent results with female subjects. Therefore, this study will examine hostility's influence in women's cardiovascular reactivity.

Social Coping Strategies

While a relationship among hostility, social support, and cardiovascular reactivity appears to exist, the mechanism(s) by which it works are not yet determined. One possible mechanism is the individual's selection of coping strategies in response to environmental stressors. Anderson, Lawler, Krishnamoorthy, and Kelly (1997) reported a relationship between hostility and coping strategies in their study of high and low hostile individuals. A positive relationship appears to exist between hostility and avoidant coping strategies such as social withdrawal, resignation, self-pity, avoidance, and drug use. An

analysis of hostility by Han, Weed, Calhoun, and Butcher (1995) supports the above by revealing four dimensions of hostility, among which is social avoidance. This tendency towards social avoidance and avoidant coping strategies by hostile people may be a contributor to their risk for cardiovascular disorders.

Purpose of this Study

The present study examines the possibility that hostile people will report avoidant coping styles more often than social coping styles, and due to these avoidant coping strategies will not experience the health benefits of social support. The present study attempts to address the following questions:

1. Does social support reduce reactivity to an interpersonal stressor?
2. Do high and low hostile women differ in their cardiovascular reactions to an interpersonal stressor?
3. Does level of hostility influence the effectiveness of social support in reducing reactivity to this interpersonal stressor?
4. Does method of social coping alter the effectiveness of social support in reducing reactivity to this interpersonal stressor?
5. Do high and low hostile women vary on method of coping with stress?
6. Does reported coping with stress through social support mediate the relationship between hostility and social support as they affect cardiovascular reactivity to an interpersonal stressor?

In response to the above research questions, the following hypotheses emerge:

1. The support condition will be associated with lessened cardiovascular reactivity

to the stressor.

2. High hostile women will experience greater cardiovascular reactivity than low hostile women during this stressor.

3. Cardiovascular responses to the stressor in low hostile individuals will be attenuated by social support. High hostile individuals are expected to respond similarly whether support is present or not.

4. Those who report coping through social support will experience lessened reactivity in the support condition. Those individuals who report not coping through social support will not experience attenuated cardiovascular reactivity in the support condition.

5. Hostile people will report more socially avoidant coping strategies and less socially supportive coping strategies than low hostile people.

6. Reported coping through social support will moderate the effects of hostility level and social support on cardiovascular responses.

CHAPTER 2

METHOD

Design

A two condition, within subjects experimental design was used with each subject experiencing both support and no support conditions. Three dependent variables were measured: heart rate, systolic blood pressure, and diastolic blood pressure. Hostility level and coping mechanisms were also examined as independent variables.

Participants

Ninety female undergraduate students were used as participants in this study. Participants ranged in age from 17 to 41 years old with a mean age of 19.6, sd = 3.6. Seventy-seven of the participants were Caucasian (86%), 5 were African-American (6%), 2 were Hispanic (2%), 4 were Asian (4%), and 2 were other nationalities (2%). They were recruited through a sign-up sheet on a bulletin board in the psychology building at a large southern university. They were given extra credit as payment for their participation.

Setting

The experiment was performed in the health psychology laboratory at a large southern university. The experimental room is equipped with cardiovascular monitoring devices, 2 chairs, a television, VCR, and a chalkboard.

Procedure

Following signing-up for this experiment, each participant was telephoned and reminded of the time and location of the experiment. Participants were instructed not to

eat or drink anything containing caffeine, drink alcohol, nor smoke for up to two hours prior to the experiment due to the influences these can have on blood pressure.

Participants arrived one at a time and completed the informed consent form which indicated in detail what was expected from them (see Appendix B). They were told that they were allowed to cease participation at any point during the experiment. Following instructions, the participant completed a packet of questionnaires including the Cook-Medley Hostility Index, the Social Coping Inventory, and a demographics questionnaire (see Appendix).

Following the completion of the questionnaire packet, the participant was taken into the experimental room where her height and weight were measured and recorded. She was seated in one of the two chairs and a blood pressure cuff was attached to her arm. The confederate was then brought into the room and was introduced to the participant as another subject completing the experiment. The confederate's height and weight were recorded, she was seated in the second chair, and was fitted with a blood pressure cuff to maintain the charade.

After testing the blood pressure cuff to insure comfort and proper readings, both the confederate and participant were asked to sit quietly for 10 minutes while watching a relaxation video. They were instructed not to talk to each other and to sit as quietly as possible. During this ten minute period, heart rate, diastolic blood pressure, and systolic blood pressure were measured every minute. The baseline rates were computed by averaging the reading from the seventh, eighth, and ninth minutes of this resting period.

Following the baseline period, they were introduced to a third individual. This third individual was introduced as an assistant of the experimenter and the moderator of

the upcoming task. The explanation of the task was given to the actual participant and to the confederate as follows:

> "Your task is to discuss a topic that I give you for 5 minutes and 20 seconds. You will take turns speaking for 20 second intervals. My assistant will moderate the discussion by telling each of you when your 20 seconds is up and the next person should start talking. You will alternate back and forth and will both get eight turns to speak. Please continue speaking for the entire 20 seconds of each interval. The moderator will also be keeping track of good points that she thinks you make during the discussion. For each good point made, you will be given one check mark on the blackboard. Keep in mind that typically in discussions like these, four check marks indicates a good discussion of your viewpoint. Additionally, during this discussion, the cuff will inflate and deflate regularly to monitor your blood pressure."

Following that explanation, the researcher presented the topic "Should Abortion be Legal?" or "Should Drugs be Legalized?" for discussion and the participant was chosen to start the discussion. The topic of discussion was randomly assigned prior to the experiment. The moderator monitored the clock to ensure that each person spoke for 20 seconds and that they alternated accordingly.

Prior to the experiment, the confederate was instructed to always disagree with the subject's point of view. This was done to induce interpersonal stress in the subject, thus

producing increased cardiovascular responses. After every statement made by the participant, the confederate refuted what was just said and presented the opposing argument. The confederate began every 20 second interval with dissenting statements such as "I disagree with that" or "I don't believe that."

Following the discussion, the participant and confederate completed an 8 item questionnaire which assessed their perception of support, stress, anxiety, enjoyment of the discussion, desire to leave the discussion, anger, rejection, and acceptance during the discussion period (see Appendix). Following completion, they watched the relaxation video for 5 minutes, in order to return to baseline rates of blood pressure and heart rate. Following this resting period was a second discussion period similar to the first. For this discussion period, the topic was either "Should Drugs be Legalized?" or "Should Abortion be Legal?" depending on which topic was given in the first session. Similar to the first, the participant and confederate alternated speaking at 20 second intervals. The confederate continued to present the opposing arguments during this discussion.

Following this second discussion session, the participant and confederate completed the same 8 item questionnaire to assess their feelings during that discussion. They viewed the relaxation video for a final 5 minute rest period, in order to return to baseline levels. Following the rest period, the participant was debriefed and told that the confederate was an assistant of the researcher and was instructed prior to the experiment to disagree with each statement made by the participant. They were informed that the study was testing how one reacts to differences in opinions and told not to take the disagreements personally.

Support versus No Support Conditions

Each participant experienced both the support and the no support conditions. Half received support during the first discussion session and no support during the second discussion session, while half received no support during the first session and support during the second session. The order of support condition was randomly assigned prior to the experiment and counterbalanced with discussion topic.

In the support condition, to exhibit support, the moderator nodded and smiled while the participant was talking. The moderator also exhibited support and agreement with the participant's position by saying "I agree with you" or "You are right" following the participant's 20 second intervals. Finally, support with the participant's viewpoint was displayed by giving check marks to the participant. The moderator was trained to provide 5 to 6 check marks to the participant throughout the "supported" discussion period. In the no support condition, while the confederate is attacking the participant's position, the moderator remained quiet without making any supportive gestures such as smiling or nodding. The moderator also provided no check marks to the participant and 1 to 2 marks to the confederate.

Measures

Cardiovascular Reactivity. Three measures of cardiovascular reactivity were recorded: heart rate, systolic blood pressure and diastolic blood pressure. An automated blood pressure cuff (Critikon Dinamap Vital Signs Monitor 1846) placed on the participant's arm was used to obtain these measures. Reactivity was calculated by subtracting the average of the seventh, eighth, and ninth readings of the baseline period from the average of the

five minutes of each discussion.

Hostility. The Cook-Medley Hostility Index (Cook & Medley, 1954) was used to measure hostility level for each participant. The Cook-Medley is comprised of 50 items which contain three subscales: cynicism, hostile affect, and aggression. The total score, however, is used to denote total hostility level. This study used the total score to categorize participants by hostility level (see Appendix C).

Social Coping Strategies. Methods by which participants cope with stress were self-reported on the Social Coping Inventory (Janke, Erdmann, & Kallus, 1985). This is a 120 item questionnaire which outlines 20 coping strategies. This study focuses on coping through social support (see Appendix D).

Manipulation Check

To ensure that the participants perceived the confederate as disagreeable and the moderator as supportive or non-supportive, an 8 item questionnaire was completed following each discussion session (see Appendix E). Twenty-one participants who did not recognize the support manipulation were excluded from analyses.

CHAPTER 3
RESULTS

Data Analysis

The statistical package "Crunch" was used to analyze these data. A p-value of .05 was used as the criterion for significant differences. To determine whether social support reduced reactivity to the stressor, an Analysis of Variance with resting level as a covariate (ANCOVA) was performed. To determine if social support's effect on reactivity to stress varies for high and low hostile people, a two way (hostility, support/no support) ANCOVA (with resting level as the covariate) was computed on each cardiovascular measure. A median split of Cook-Medley scores, divided subjects into high and low hostile groups. The high hostile group consisted of those with a Cook-Medley score of twenty-one or greater. The low hostile group consisted of those with a Cook-Medley score of twenty or less. Finally, to determine if certain social coping strategies interact with hostility and social support, an ANCOVA (with rest as the covariate) was performed comparing the mean reactivity of the support and no support conditions with four groups: high seeking social support/high hostility, high seeking social support/low hostility, low seeking social support/low hostility, and low seeking social support/high hostility. A median split of scores from the social support subscale of the Social Coping Inventory divided participants into two groups: those high in seeking social support (score $\geq$ 18) and those low in seeking social support (score $\leq$ 17).

Reactions to the Discussion Tasks

Responses from the eight item questionnaire that was completed following each discussion period were compared. Significant differences emerged between the support

and no support discussions for enjoyment of the discussion, wanting to leave the discussion, perceived support for ideas, feelings of rejection during the discussion, and feelings of acceptance during the discussion. Participants reported feeling significantly more enjoyment during the supported discussion than during the non-supported discussion, $F(1,90) = 84.1$, $p < .0001$. Participants also reported less desire to leave during the supported discussion than during the non-supported discussion, $F(1,90) = 22.3$, $p < .0001$. Participants reported feeling more support for their ideas during the supported discussion than during the non-supported discussion, $F(1,90) = 36.8$, $p < .0001$. Also, participants reported feeling less rejection ($F(1,90) = 22.8$, $p < .0001$) and more acceptance ($F(1,90) = 33.6$, $p < .00001$ during the support condition than during the no support condition (see Table 3-1) *.

Effects of hostility also emerged for reports on wanting to leave the discussions and for reports on feelings of rejection during the discussions. High hostile women reported feeling significantly more rejected than low hostile women, $F(1,89) = 5.0$, $p < .03$, and high hostile women reported a significantly higher desire to leave the discussions than low hostile women, $F(1,89) = 9.6$, $p < .003$ (see Table 3-2).

Social Support and Cardiovascular Responses

Our first hypothesis claimed a main effect for social support would exist with a reduction of cardiovascular reactivity to the speech stressor when support is present. This main effect of social support will be discussed only briefly due to the interactions presented later. Contrary to our initial hypothesis, support was associated with greater

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*All tables and figures may be found in Appendix A.

systolic blood pressure reactivity to the stressor, with a mean systolic blood pressure reactivity of 16.4 mmHg in the support condition and 14.5 mmHg in the no support condition, $F(1, 90) = 7.2$, $p < .01$. Support was also associated with greater diastolic blood pressure reactivity, with a mean diastolic blood pressure reactivity of 10.7 mmHg in the support condition and 9.2 mmHg in the no support condition, $F(1,90) = 4.1$, $p < .05$.

Hostility and Cardiovascular Responses

An effect for hostility emerged with significantly higher systolic blood pressure reactivity and heart rate reactivity in low hostile women than in high hostile women during both discussions. The mean systolic blood pressure reactivity for low hostile women was 17.9 mmHg, sd = 1.4, while the mean systolic blood pressure reactivity for high hostile women was 13.2 mmHg, sd = 1.2, $F(1,89) = 6.6$, $p < .02$ (see Figure 3-1). Low hostile women also displayed a higher mean heart rate reactivity than high hostile women. The mean heart rate reactivity for low hostile women was 14.3 bpm, sd = 1.7, and 10.0 bpm, sd = 1.0, for high hostile women, $F(1,89) = 5.1$, $p < .03$ (see Figure 3-2).

Hostility, Social Support, and Cardiovascular Response

An interaction between hostility, social support, and cardiovascular reactivity was also hypothesized, with low hostile women experiencing lower cardiovascular reactivity in the social support condition than no support condition, and high hostile women experiencing similar reactivity in both support and no support conditions. As hypothesized, high hostile women experienced equivalent mean blood pressure and heart rate reactivity in both the support and no support conditions.

However, for low hostile women, mean systolic and diastolic blood pressure

reactivity was higher when support was present than when it was not present. Low hostile women displayed a mean change in systolic blood pressure of 19.3 mmHg, sd = 1.5, in the support condition and 16.6 mmHg, sd = 1.5, in the no support condition, $F(1,43) = 6.4$ $p < .02$. For high hostile women, mean systolic blood pressure reactivity was 13.8 mmHg, sd = 1.4, in the support condition and 12.6 mmHg, sd = 1.3, during the no support condition, $p > .05$. (see Figure 3-3).

Differences between support conditions for low hostile women in diastolic blood pressure reactivity were similar to those in systolic blood pressure reactivity. Low hostile women displayed a mean change in diastolic blood pressure of 11.5 mmHg, sd = .96, in the support condition and 8.8 mmHg, sd = 1.1, in the no support condition, $F(1,43) = 5.7$, $p < .03$. For high hostile women, mean diastolic blood pressure reactivity was 9.9 mmHg, sd = .95, during the support condition and 9.7 mmHg, sd = .86, during the no support condition, $p > .05$ (see Figure 3-4).

Social Coping, Social Support, and Cardiovascular Responses

It was also hypothesized that those who reported coping through social support would experience less cardiovascular increases in the support condition, while those who did not report coping through social support would not experience attenuated responses. Significant interactions between reported coping through social support and the support conditions were found for heart rate reactivity, $F(1,90) = 5.1$, $p < .03$, systolic blood pressure reactivity, $F(1,90) = 6.6$, $p < .02$, and diastolic blood pressure reactivity, $F(1,90) = 5.6$, $p < .02$. For heart rate reactivity, a trend of lessened reactivity in the support condition for those who reported coping through support emerged. For those who

reported coping through social support, mean heart rate reactivity was 12.5 bpm, sd = 1.3, in the support condition and 14.7 bpm, sd = .84, in the no support condition, $F(1,42) = 3.03$, $p = .089$. For those reporting not coping through social support, no significant heart rate reactivity differences emerged between the support and the no support conditions (see Figure 3-5).

Mean systolic blood pressure reactivity was significantly higher in the support condition than in the no support condition for those who reported not coping through social support, while systolic blood pressure reactivity was not significantly different in the support and no support conditions for those who reported coping through social support. Mean change in systolic blood pressure was 16.3 mmHg, sd = 1.6, in the support condition and 12.8 mmHg, sd = 1.4, in the no support condition for those reporting not coping through social support, $F(1,48) = 10.9$, $p < .002$ (see Figure 3-6). Mean change in diastolic blood pressure was 11.8 mmHg, sd = .98, in the support condition and 9.0 mmHg, sd =.92, in the no support condition for those not coping through social support, $F(1,48) = 9.1$, $p < .004$. There was no significant difference in diastolic blood pressure reactivity during the support and no support conditions for those reporting coping with stress through seeking social support (see Figure 3-7).

Hostility and Social Coping Methods

It was predicted that high hostile participants would report more avoidant and fewer socially supportive coping methods than low hostile participants. T-tests revealed significant differences in reported coping methods between high and low hostile women. High hostile women reported coping with stress through the following methods

significantly more than low hostile women: escape ($T(88) = -1.8$, $p < .07$), social withdrawal ($T(88) = -3.6$, $p < .001$), resignation ($T(88) = -1.9$, $p < .05$), rumination ($T(80) = -2.6$, $p < .01$), self-pity ($T(88) = -3.6$, $p < .001$), self-blame ($T(88) = -2.6$, $p < .02$), and aggression ($T(86) = -3.4$, $p < .01$). Low hostile women reported coping with stress through relaxation more than high hostile women ($T(88) = 2.0$, $p < .05$ (see Table 3-3).

Hostility, Social Coping, Social Support, and Cardiovascular Response

Due to a proposed difference in social coping strategies employed by high and low hostile people, it was hypothesized that coping styles would mediate the interaction between hostility and social support as reflected in cardiovascular reactivity. A three-way interaction emerged for change in heart rate, $F(1,90) = 4.4$, $p < .04$, and for diastolic blood pressure reactivity, $F(1,90) = 5.1$, $p < .03$. For low hostile women who reported coping through social support, mean heart rate reactivity was higher in the no support condition (ΔHR = 17.2 bpm, sd = 3.0) than in the support condition (ΔHR = 13.0 bpm, sd = 1.7), $F(1,22) = 3.8$, $p < .06$. No significant heart rate reactivity differences emerged between support conditions for low hostile women who reported not coping through social support, nor for high hostile women in any condition (see Figure 3-8).

For low hostile women who reported not coping through social support, mean diastolic blood pressure reactivity was higher in the support conditions (ΔDBP = 13.4 mmHg, sd = 1.3) than in the no support condition (ΔDBP = 7.5 mmHg, sd =1.2), $F(1,21) = 15.8$, $p < .001$. No significant difference in diastolic blood pressure reactivity between support conditions emerged for low hostile women who reported coping through social support, nor for high hostile women in any conditions (see Figure 3-9).

CHAPTER 4

DISCUSSION

This study investigates the relationship between social support and hostility as these variables affect women's cardiovascular reactions to an interpersonal laboratory stressor. Additionally, we explored the effect of women's coping styles on cardiovascular reactions during the stressor. We administered the Cook-Medley Hostility Index to measure hostility level and the Social Coping Inventory to assess the methods used when coping with stress. We also developed a situation in which the participants would have to express and defend their views to a confrontational and disagreeable confederate. These women participated in two discussions with a disagreeable confederate: during one discussion they received support for their ideas from the discussion moderator, while during the other discussion they did not receive support. Throughout the discussions, we measured the women's blood pressure and heart rate reactions.

Based on previous research, we proposed that the participants would display greater reactivity in the no support condition than in the support condition. We also hypothesized that high hostile women would evoke greater reactivity than low hostile women. Furthermore, we anticipated that an interaction would emerge between hostility and support condition. We hypothesized that low hostile women would display less reactivity during the support condition than during the no support condition, while high hostile women would not experience attenuated reactivity due to the support.

We also considered the influence of social coping strategies on cardiovascular

responding. We proposed that women who reported coping through social support would benefit more from the presentation of support than those women who reported not coping through social support. Additionally, we hypothesized that high hostile women and low hostile women would differ on their reported social coping strategies, with high hostile women reporting more socially avoidant strategies than low hostile women. Finally, we anticipated a three way interaction between hostility, coping through social support, and support condition, with low hostile women who coped with social support benefiting most from the social support condition.

Support versus No Support

Our first hypothesis was that cardiovascular reactions would be lower during the support condition than during the no support condition. When further investigating the differences between the cardiovascular reactions during the support and no support conditions, we hypothesized that cardiovascular responses to the stressor would be attenuated by social support for low hostile individuals only. We proposed that high hostile individuals would respond similarly when support was present or not.

While previous studies have supported the claim that social support lessens cardiovascular reactivity to acute laboratory stressors, this study did not find that main effect for social support. In the present study, social support was associated with higher systolic and diastolic blood pressure reactivity than no support. Furthermore, we found that this was true only for low hostile women. Low hostile women responded to social support with greater systolic and diastolic blood pressure reactivity than during the no

support condition. High hostile women were equally reactive in both support and no support conditions, suggesting that they were not affected by the presentation of support.

Therefore, while we did find an interaction between hostility and social support, it was not the interaction we hypothesized. We proposed that we would find results similar to Lepore (1995), in which low cynically hostile people had less blood pressure and heart rate reactivity during the support condition than during the no support condition, while high cynically hostile people were unaffected by the presentation of support. Instead, we found that our low hostile women had greater blood pressure reactivity during the support condition than during the no support condition, while our high hostile women were unaffected by the presentation of support. This is somewhat consistent with Lepore's (1995) results which state that high hostile individual's cardiovascular reactions are unaffected by a support manipulation. It is inconsistent, however, concerning the low hostile women.

It is possible that our manipulation encouraged greater engagement from the low hostile women during the support condition than during the no support condition. Our support manipulation could have reinforced our low hostile women to participate more in the discussions. Thus, with continued support, our low hostile women may have tried harder in the support condition thus evoking greater cardiovascular responses. The lessened reactivity in the no support condition for the low hostile women could be due to the fact that the support was not provided, thus they were not reinforced for their engagement. Thus with less engagement in the no support condition, the low hostile women experienced less reactivity than in the support condition.

It seems as if this was not the case for the high hostile women. Like Lepore (1995) reported, the high hostile women did not seem to be affected by support. They may not have been as responsive as the low hostile women to the positive feedback from the moderator. We propose that their engagement was not enhanced by the presentation of support, thus neither was their reactivity.

Reactivity for High and Low Hostile Women

Our second hypothesis was that high hostile women would display greater reactivity than the low hostile women in this interpersonal stressor. We found the opposite, however, with the low hostile women reacting with greater systolic blood pressure and heart rate reactivity than the high hostile women. A possible explanation for higher reactivity in low hostile women is, as stated above, that the low hostile may have been more engaged in our task than the high hostile women. Our task could have invoked greater engagement from low hostile individuals than from the high hostile women due to their tendency to cooperate with the goals of the session. The fact that the high hostile women reported wanting to leave the discussions significantly more than the low hostile women suggests a possible withdrawal of engagement by the high hostile women. High hostile women, who by definition are cynical, mistrusting, and doubting, may have been suspicious of the instructions and of the experimenter. Thus, their cynical attitudes may have muted their engagement in the task, and subsequent reactivity during the task. Suls and Wan (1993) assert that hostile individuals tend to withdraw from interactions in the laboratory, thus becoming less involved and less reactive. Although this is found in the

laboratory, they contend that this behavior is not characteristic of their everyday behavior, in which situations are not as easily avoided as a laboratory experiment. Our results seem consistent with Suls' and Wan's assertion that high hostile individuals withdraw from laboratory interactions.

A second explanation for this increased cardiovascular reactivity in low hostile women could be a difference in how comfortable high and low hostile women were with the confrontational confederate. High hostile subjects may have been more comfortable in this task because it may mirror everyday interactions for them. Due to their hostile, cynical, and aggressive natures, they may be more accustomed to disagreeing and arguing with others, thus did not respond with exaggerated reactivity during this manipulation. In contrast, low hostile women may not usually encounter confrontational situations or ones in which they cannot diffuse the confrontation. In this setting, even if the participant changed her point of view to suit her partner, the confederate still challenged her. Benotsch, Christensen, and McKelvey (1997) investigated a working day of high and low hostile individuals during which high hostile individuals reported greater daily interpersonal stress and less social support than low hostile individuals. Low hostile women may have been more uncomfortable with our task due to the novelty of a disagreeing confederate; thus, their cardiovascular reactions to such a task were greater than those of high hostile women.

Social Coping Strategies

In this study, the social method with which women cope with stress was introduced as a possible mediator of social support and cardiovascular reactivity. It was

hypothesized that women who report that they usually cope with stress through seeking the support of others would benefit the most from the support manipulation. As expected, it was found that heart rate reactions tended to be lower in the support condition than in the no support condition for those women who reported usually coping that way. For those who reported usually not coping through social support, their reactions were not lower during the presentation of support. In fact, systolic blood pressure and diastolic blood pressure reactions were higher during support than during no support for those who reported not coping with stress through seeking social support. This suggests a detrimental effect of social support for those who do not cope that way. Thus, it seems that social support is beneficial to those women who cope through seeking the support of others, while it is harmful to those women who do not cope that way.

Reported social coping strategies were also examined by hostility. It was hypothesized that the high hostile women would report coping through avoidant methods significantly more than the low hostile women. This hypothesis was supported, with high hostile women reporting coping through the following avoidant coping mechanisms significantly more than the low hostile women: escape, social withdrawal, resignation, rumination, self-pity, self-blame, and aggression. Low hostile women reported coping with stress through relaxation significantly more than high hostile women. The socially avoidant coping styles reported by the high hostile women are congruent with past research which suggests that social avoidance is an element of hostility as measured by the Cook-Medley Hostility Inventory (Barefoot, Dodge, Peterson, Dahlstrom, & Williams, 1989; Han, Weed, Calhoun, & Butcher, 1995).

It was also hypothesized that social coping methods would interact with hostility and support condition, with low hostile women who cope through social support benefiting the most from the support. It was found that social coping methods interacted with hostility and social support as they influenced heart rate responses to this laboratory discussion task. There were no significant heart rate reactivity differences between support and no support conditions nor between coping through social support or not, for high hostile women. However, for low hostile individuals, mean heart rate reactivity was similar for all conditions except for those low hostile women who reported coping through social support and did not receive it. Low hostile women who reported usually coping with stress through social support appeared to have an increased heart rate reactivity when support was not given to them, while their heart rate reactivity when they did receive support was similar to the low hostile/don't cope through social support in either support or no support conditions. This suggests that, for low hostile women, not receiving support when one usually copes that way can be damaging. However, if one does not cope through support, it does not seem to matter if it is given or not. While this is true for low hostile women, for high hostile women, neither social coping nor support seem to moderate cardiovascular responses. Once again, it seems as if social interactions are important to the laboratory reactivity of low hostile women, but not for high hostile women.

Implications and Limitations of this study

These results seem to contradict the results of many of the previous studies on hostility and cardiovascular responding. Many studies which have used interpersonal

laboratory tasks have found that high hostile individuals respond with greater reactivity than low hostile individuals (Burns & Katkin, 1993; Helmers & Krantz, 1996; Smith & Allred, 1989; Smith & Brown, 1991; Suarez, Harlan, Peoples, & Williams, 1993; Suarez & Williams, 1989). However, it should be noted that many of these studies which have found increased reactivity for high hostile individuals have found this in male subjects. Several studies have only investigated the reactivity of men, while others have reported finding no significant differences in cardiovascular reactivity between high and low hostile women (Burns & Katkin, 1993; Smith & Brown, 1991). The reactivity implications of hostility for women is not as well studied as it is for men. Future research should address this issue of women's hostility and its effect on the cardiovascular health of women.

In addition to exploring the effects of hostility on women's responses, this study focused on the effect of support on women's cardiovascular reactivity. It seems as if the increased reactivity in the support condition than in the no support condition also contradicts many of the previous studies on social support and cardiovascular responding. The greater reactivity of blood pressure that was found when support was present than when it was not, led to a re-examination of the experimental manipulation. The scenario was the same for all: upon entering the laboratory, they were told that they would discuss two controversial topics with another person, and that they would be awarded check marks for good points that the moderator thought that they made during the discussions. During the support condition, the moderator awarded five check marks to the participant while nodding and smiling in reaction to the participant's comments. During the no support condition, one check mark was awarded to the confederate and none to the

participant. The moderator also responded with no nodding or smiling to the participant during this condition.

It is possible that while we intended to display social support through these "checks," we instead created a situation of social evaluation. The participants may have interpreted these "checks" as an assessment of their performance and not just as emotional support. In a recent study by Smith, Nealey, Kircher, and Limon (1997), threat of evaluation increased systolic blood pressure by 36%. Thus, in our study, the constant awarding of check marks during the support condition may have continually reminded the participants of the evaluative condition, thus raising their blood pressure. Because the check marks during the no support condition were awarded less frequently, they may have been less aware of this evaluation, thus not evoking as large a blood pressure response as in the support condition.

Another possible contributor to this socially evaluative situation is the status of our "supporter." Our "supporter" was introduced to the participants as one of the experimenters and the moderator of the discussion. Therefore, because the supporter was introduced as a moderator, the supporter was given a higher status than the participants. In most of the past research in which social support has lessened cardiovascular reactivity to laboratory stressors, support has been given by a friend or peer of the participants and not from someone of higher status (Gerin, Pieper, Levy, & Pickering, 1992; Gerin, Milner, Chawla, & Pickering, 1995; Kamarck, Manuck, & Jennings, 1990; Kamarck, Annunziato, & Amateau, 1995; Lepore, Allen, & Evans, 1995; Lepore, 1995; Uchino & Garvey, 1997). Therefore, because the supporter was given a higher status than the participants,

the activity of the moderator may have seemed like social evaluation and not social support. It should be noted, however, that the participants reported feeling supported during the support condition and that social evaluation is our inference and not found through questionnaire data. This distinction between friend/peer support and supervisor support should be examined in future studies to see if, in fact, support from an authority is more evaluative than support from a friend/peer.

It should be noted that the higher reactivity in the support condition than in the no support condition was only the case for the low hostile women. While it appears that in a socially evaluative situation, blood pressure increases in the presence of positive evaluation, this is not the case for high hostile women. Thus, either the manipulation only evoked this proposed feeling of social evaluation from the low hostile women or social evaluation does not affect high hostile women. This is consistent with Lepore's (1995) results which state that low hostile individual's cardiovascular reactions are affected by a support manipulation and high hostile individual's cardiovascular reactions are not affected by a support manipulation. While our effect was in the opposite direction of Lepore's effect, we can possibly attribute that to a difference between "social support" and "social evaluation." However, it still seems that any social manipulation only affects low hostile individuals and not high hostile individuals. Future studies should address the distinction between social evaluation and social support and its interaction with hostility level.

A final limitation of the present study is the inclusion of only women in the experiment. Due to the exclusion of men, these results depicting an interaction between hostility level and social support should only be generalized to women. Future studies can explore the effects of social coping strategies and potential social evaluation on men's

reactivity to stress. Additionally, future studies should explore further this effect of hostility on women's cardiovascular reactivity.

Conclusion

This study has shown the complexities of both hostility and social support as these constructs relate to the cardiovascular reactivity of women. Studies which have focused on the reactivity of high and low hostile individuals have consistently found high hostile males to be more reactive in stressful interpersonal tasks. In this stressful interpersonal task, high hostile women were not more reactive than the low hostile women, thus suggesting that hostility may operate differently in men and women. In fact, this study found that low hostile women displayed greater reactivity than high hostile women. Verification of these findings would raise serious questions concerning reactivity as a mechanism linking hostility to cardiovascular disease in women.

Additionally, social coping was introduced as a possible mechanism linking social support to lessened reactivity in women. Individual coping styles may be important for the health benefits of social support, with those who have avoidant coping styles not benefiting as much from available support. It was also found that a difference may exist between support from a peer and support from an individual of higher status. Additional research should explore this distinction between peer and other status support in both females and males.

Finally, it was found that the operationalization of social support can be difficult, noting the possible distinction between social support and social evaluation. If the actions of the moderator were interpreted by the participants as social evaluation, the elevated

blood pressure during positive social evaluation is an important finding. The effects of positive and negative social evaluation on high and low hostile women's cardiovascular reactivity should be explored further, as well as the distinction between social support and social evaluation.

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APPENDICES

APPENDIX A

Tables and Figures

Table 3-1. Reactions to the support and no support conditions as assessed by the 8 item post-discussion questionnaire.

	Support Condition	No Support Condition
Stressful	3.30	3.53
Enjoyment	4.46*	2.87*
Want to leave	1.93*	2.72*
Anxious	3.61	3.61
Angry	2.19	2.09
Support	4.60*	3.78*
Rejected	2.24*	3.11*
Accepted	4.38**	3.41**

*$p < .0001$

**$p < .00001$

Table 3-2. Reactions to the discussion tasks for low and high hostile women as assessed by the 8 item post-discussion questionnaire.

	Low Hostile	High Hostile
Stressful	3.34	3.49
Enjoyment	3.73	3.59
Want to leave	1.98**	2.65**
Anxious	3.50	3.71
Angry	2.05	2.22
Support	4.01	3.97
Rejected	2.41*	2.93*
Accepted	4.07	3.73

*$p < .05$

**$p < .01$

Table 3-3. Reported social coping methods for low and high hostile women.

	Low Hostile	High Hostile
Escape	9.63*	11.53*
Social Withdrawal	7.54****	11.51****
Resignation	7.00**	9.09**
Relaxation	15.12**	12.89**
Self-Pity	8.98****	12.83****
Self-Blame	9.81**	12.83**
Aggression	7.51***	10.64***
Rumination	13.95***	16.70***
Minimization	14.07	13.28
Aggrandizement	11.30	12.17
Denial	11.35	11.83
Distraction	14.37	13.94
Gratification	13.02	14.15
Self-Affirmation	13.19	14.00
Control the Situation	16.65	16.30
Control the Response	14.54	15.70
Self Instruction	16.56	15.51
Social Support	16.51	15.32
Avoid	14.51	15.26
Drug Use	1.93	2.87

*$p < .07$

**$p < .05$

***$p < .01$

****$p < .001$

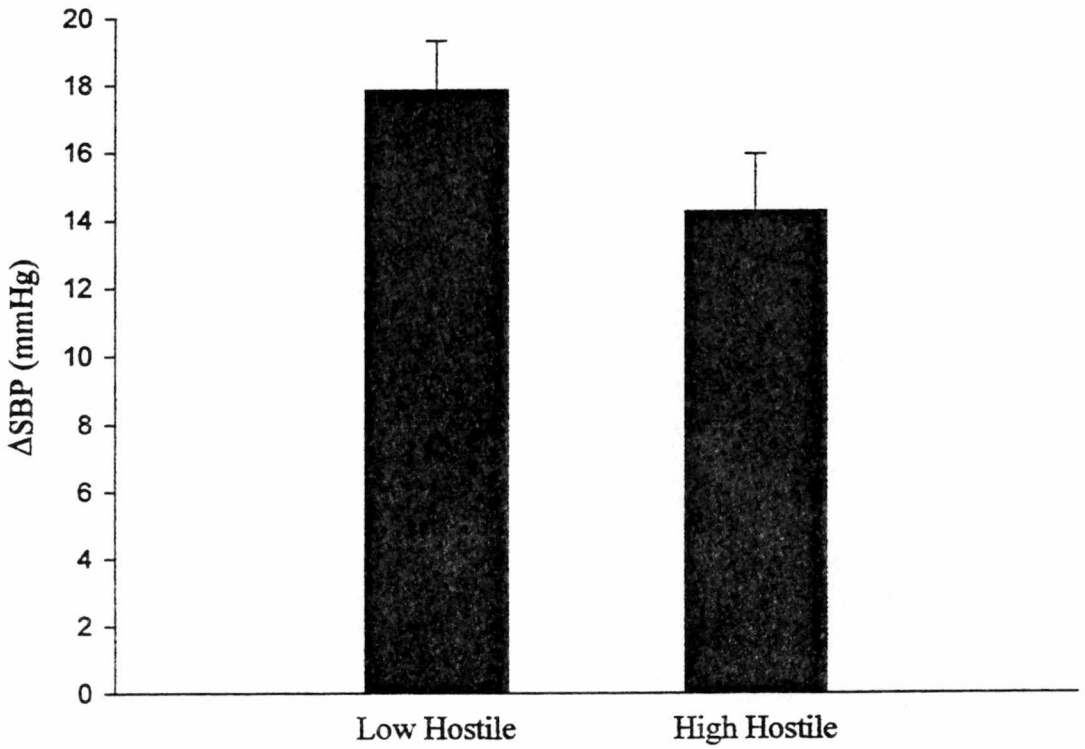

Figure 3-1. Mean systolic blood pressure reactivity during the discussions for low and high hostile women.

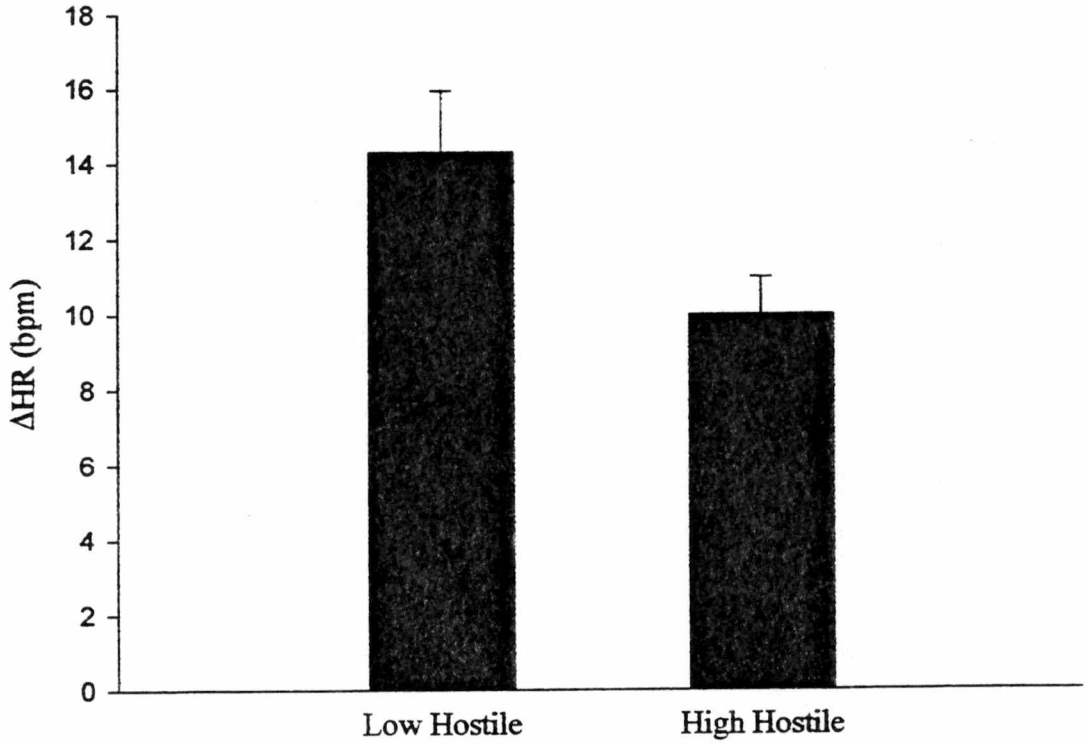

Figure 3-2. Mean heart rate reactivity during the discussions for low and high hostile women.

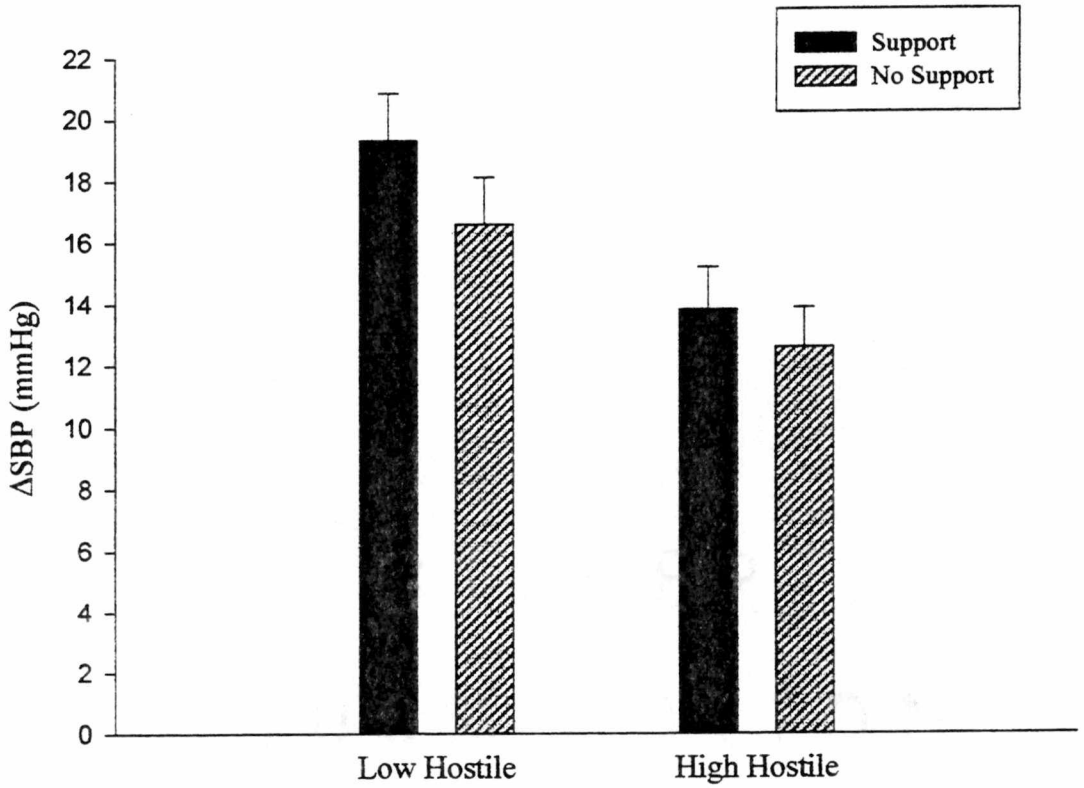

Figure 3-3. Mean systolic blood pressure reactivity during the support and no support conditions for low and high hostile women.

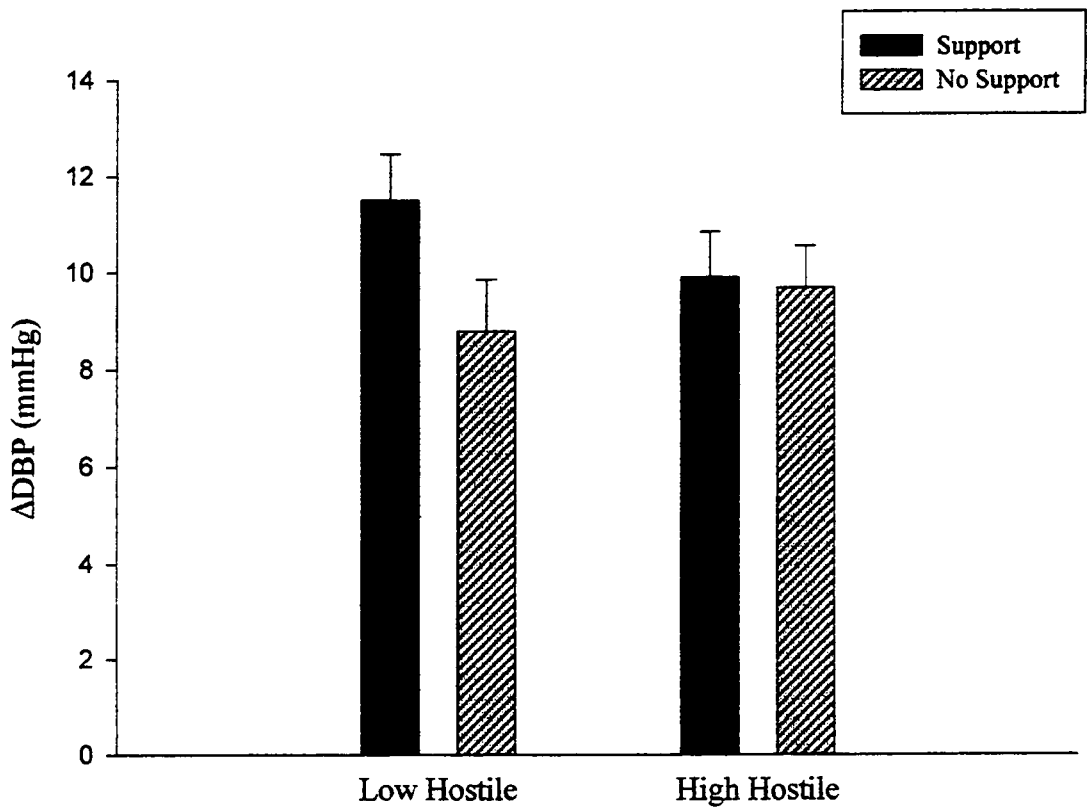

Figure 3-4. Mean diastolic blood pressure reactivity during the support and no support conditions for low and high hostile women.

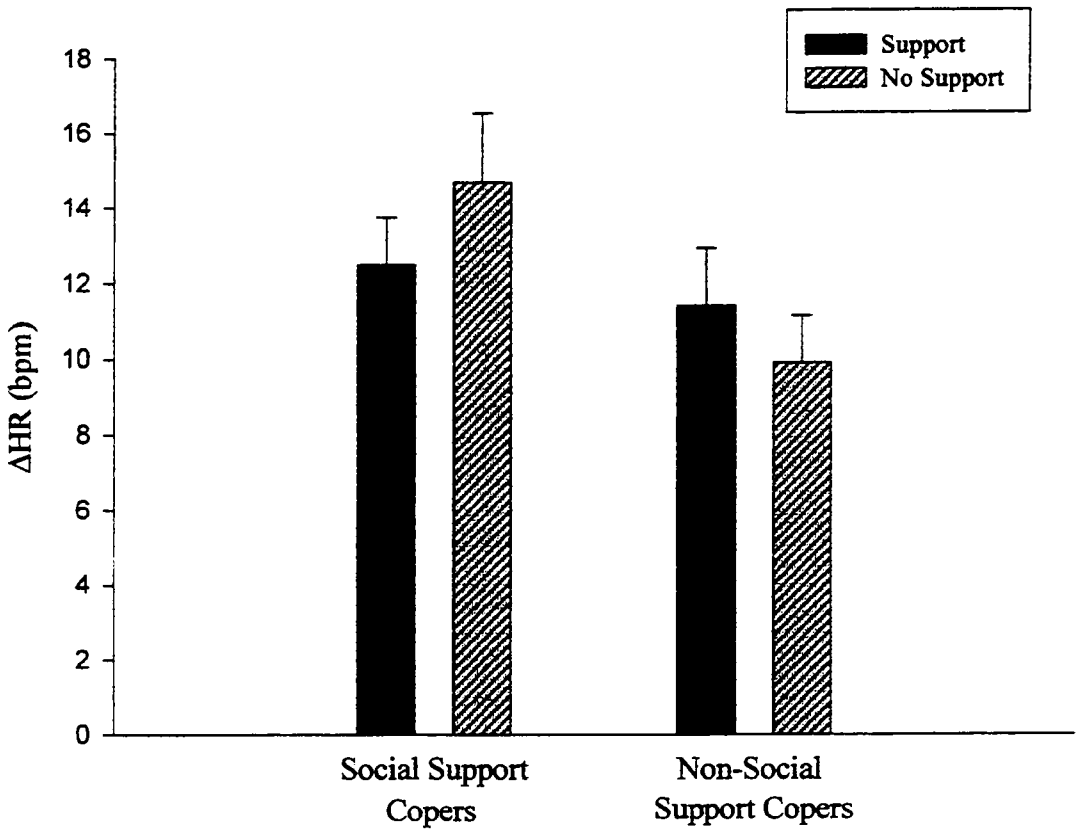

Figure 3-5. Mean heart rate reactivity during the support and no support conditions for women who cope and do not cope through social support.

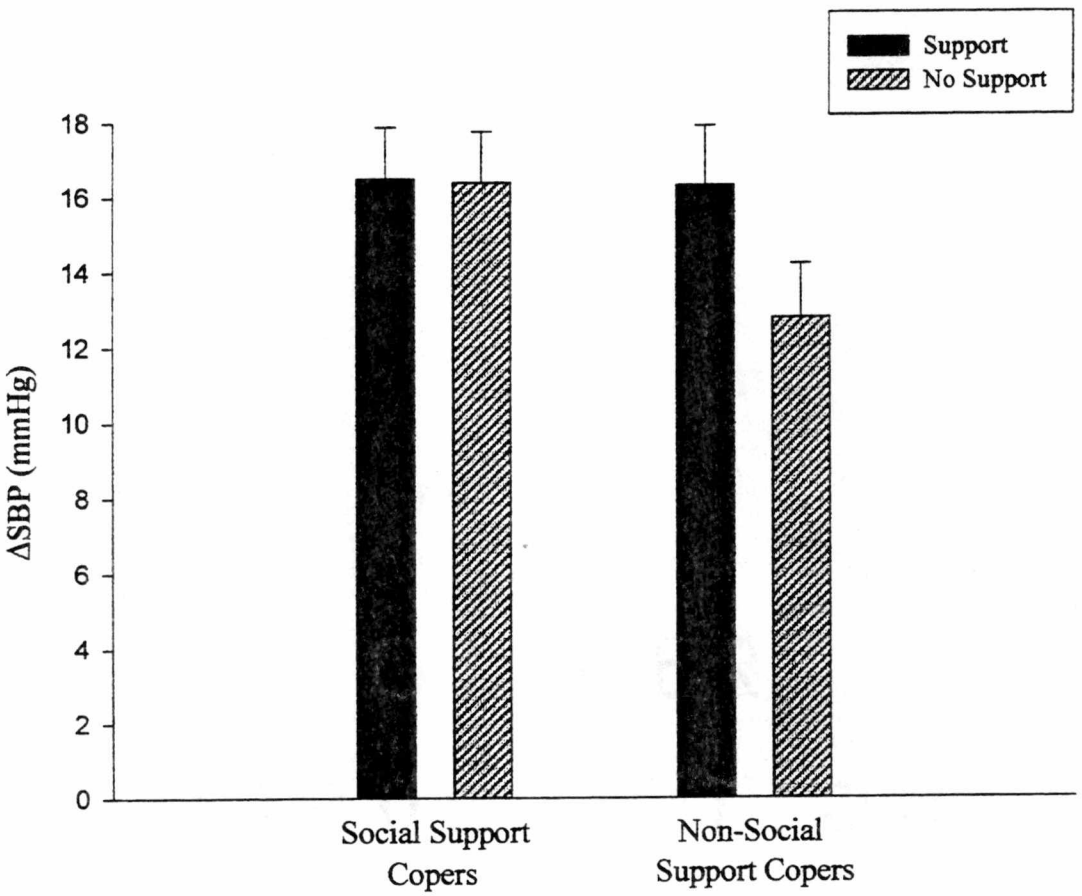

Figure 3-6. Mean systolic blood pressure reactivity during the support and no support conditions for women who cope and do not cope through social support.

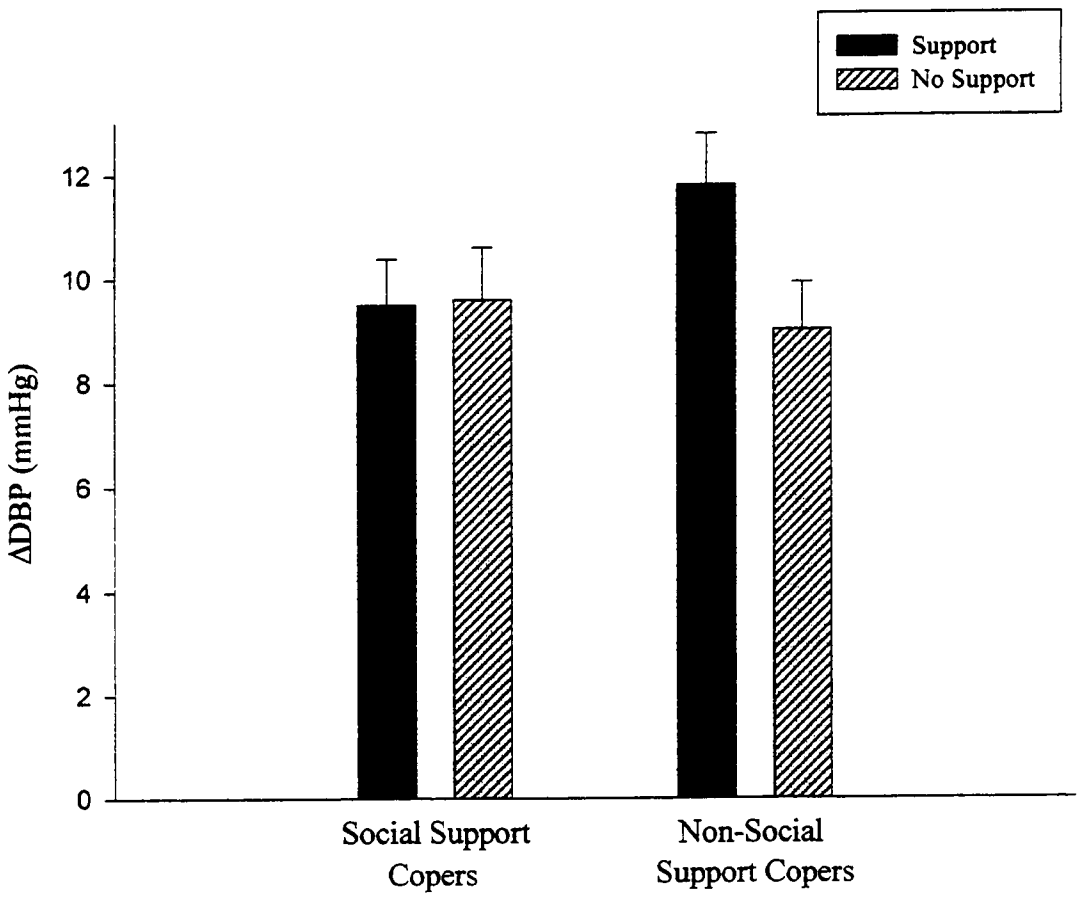

Figure 3-7. Mean diastolic blood pressure reactivity during the support and no support conditions for women who cope and do not cope through social support.

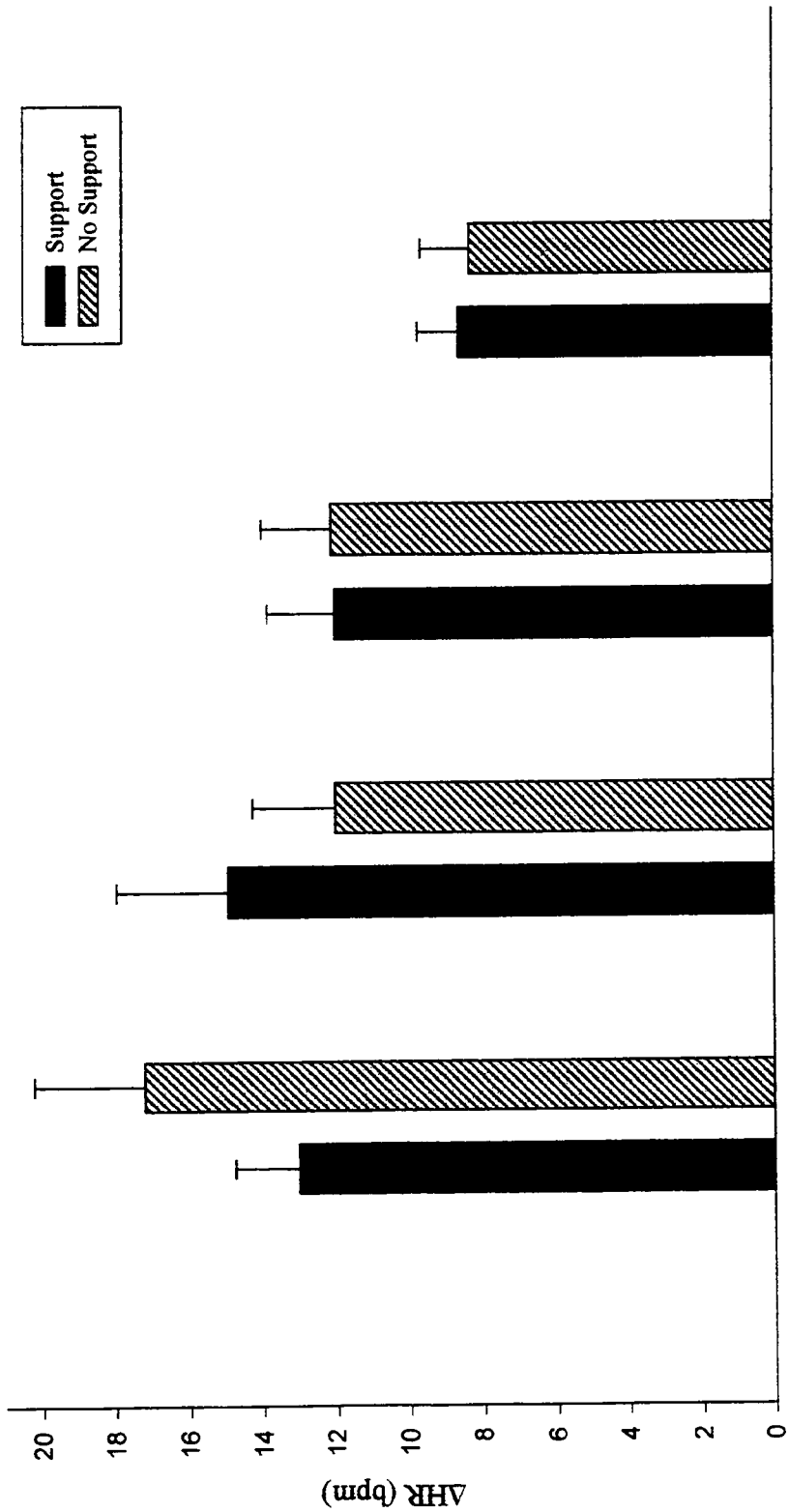

Figure 3-8. Mean heart rate reactivity for high and low hostile women who cope and do not cope through social support during both support and no support conditions.

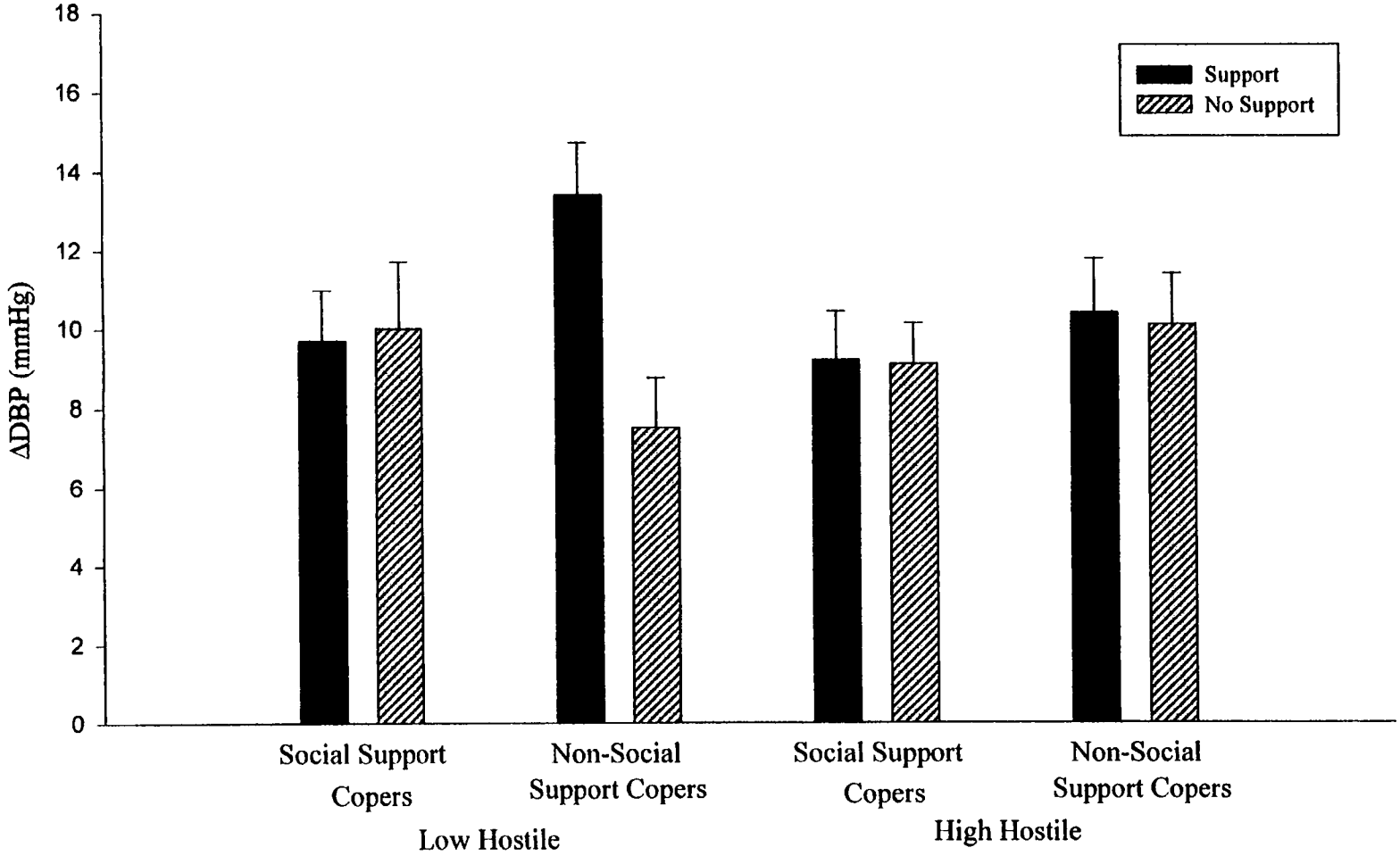

Figure 3-9. Mean diastolic blood pressure reactivity for high and low hostile women who cope and do not cope through social support during both support and no support conditions.

APPENDIX B

Informed Consent and Demographics Questionnaire

Informed Consent

Project: A study of cardiovascular reactions during a discussion.

Researcher: Kathleen A. Lawler, PhD., Department of Psychology, AP 409, 974-8458.

This research project examines the cardiovascular responses people emit when they are involved in a discussion with other individuals. We are also interested whether these responses are the same or different in those with varying personality characteristics.

This research involves two parts. Firstly, you will complete five questionnaires. They will ask you rate yourself on several characteristics and behaviors. You will also fill out a questionnaire about your health status, age, race, and other demographics. They will be identified only by number to insure your anonymity. This will take approximately 30 minutes.

Secondly, we will measure your heart rate and blood pressure by attaching an automated blood pressure cuff. While these are being monitored, you will rest for 10 minutes, followed by a 5 minute discussion period, a five minute resting period, then a second 5 minute discussion period. These discussions will be with two other people and will be on a current topic. The physiological record of this will also be kept by subject number. These records will be kept in a filing cabinet in a locked room in the Health Psychology Laboratory. They will be scored and used for the purpose of this research project within 2 years. After that time, they will be kept for 10 years as archival data and may be used in future research projects.

Your participation in this research is purely voluntary and you may withdraw from participation from the project at any time by request. No risks of personal injury are possible. From your participation you will gain an accurate reading of your resting blood pressure and receive extra credit in Introductory Psychology.

Please feel free to ask any questions about this study. Should you have any questions after the session, you may contact Dr. Kathleen Lawler, at the address shown above.

I volunteer to participate in the investigation conducted by Dr. Kathleen A. Lawler, Department of Psychology. I have read the description, I have had all my questions answered, and I agree to participate in this experiment. I also realize that I may terminate the experimental session at any time by request without penalty or loss of benefits.

Date: _____

Signature: _____

Printed Name: _____

Researcher's Signature: _____

Research Participant Information Sheet

Subject Number: _____

Name and permanent address: This is optional. Please fill out if you would like a copy of the published report.

_____

_____

_____

Height: _____ (Experimenter use only) Sex: _____

Age: _____

Weight: _____ (Experimenter use only) Race: _____

Marital Status: _____ Single _____ Married _____ Divorced _____

Widowed

Do you have any children? _____ If yes, how many? _____

Are you taking any medications at the present time? _____

If yes, please describe: _____

Are you currently taking oral contraceptives? _____

Have you had any major illnesses or surgeries in your life? _____

If yes, please describe: _____

Do you smoke cigarettes? _____ If yes, how many per day? _____

About how many alcoholic drinks do you consume on a weekly basis? _____

About how many cups of coffee do you drink a day? _____ Tea? _____

About how many soft drinks containing caffeine do you drink per day? _____

Have you ever had high blood pressure? _____ If yes, when? _____

Are you taking medication for it or did you in the past? _____

Are you employed? _____

If yes, please describe the position and hours you work per week:

_____

_____

APPENDIX C

Cook-Medley Hostility Index

(Cook & Medley, 1954)

Cook-Medley Hostility Index

Please read each statement and decide whether it is true as applied to YOU or false as applied to YOU.

T or F

____ 1. When I take a new job, I like to be tipped off on who should be gotten next to.

____ 2. When someone does me wrong, I feel I should pay them back if I can, just for the principle of the thing.

____ 3. I prefer to pass by school friends, or people I know but have not seen for a long time, unless they speak to me first.

____ 4. I have often had to take orders from someone who did not know as much as I did.

____ 5. I think a great many people exaggerate their misfortunes in order to gain the sympathy and help of others.

____ 6. It takes a lot of argument to convince most people of the truth.

____ 7. I think most people would lie to get ahead.

____ 8. Someone has it in for me.

____ 9. Most people are honest chiefly because they are afraid of being caught.

____ 10. Most people will use somewhat unfair means to gain profit or an advantage, rather than to lose it.

____ 11. I often wonder what hidden reason another person may have for doing something nice for me.

____ 12. It makes me impatient to have people ask my advice or otherwise interrupt me, when I am working on something important.

____ 13. I feel that I have often been punished without cause.

____ 14. I am against giving money to beggars.

____ 15. Some of my family have habits that bother and annoy me very much.

____ 16. My relatives are nearly all in sympathy with me.

____ 17. My way of doing things is apt to be misunderstood by others.

____ 18. I don't blame people for trying to grab everything they can get in this world.

____ 19. No one cares much what happens to you.

____ 20. I can be friendly with people who do things which I consider wrong.

____ 21. It is safer to trust nobody.

____ 22. I do not blame a person for taking advantage of people who leave themselves open to it.

____ 23. I have often felt that strangers were looking at me critically.

____ 24. Most people make friends because friends are likely to be useful to them.

____ 25. I am sure I am being talked about.

____ 26. I am likely not to speak to people until they speak to me.

____ 27. Most people inwardly dislike putting themselves out to help other people.

____ 28. I tend to be on guard with people who are somewhat more friendly than I had expected.

____ 29. People disappoint me.

____ 30. I like to keep people guessing what I am going to do next.

____ 31. I frequently ask people for advice.

____ 32. I am not easily angered.

____ 33. It makes me feel like a failure when I hear of the success of someone I know well.

____ 34. People generally demand more respect for their own rights than they are willing to allow for others.

____ 35. I am quite often not in on the gossip and talk of the group I belong to.

____ 36. I have often found people jealous of my good ideas, just because they had not thought of them first.

____ 37. I have often met people who were supposed to be experts, who were no better than I.

____ 38. I have sometimes stayed away from another person because I feared doing or saying something that I might regret afterwards.

____ 39. I would certainly enjoy beating criminals at their own game.

____ 40. I have at times had to be rough with people who were rude or annoying.

____ 41. There are certain people whom I dislike so much that I am inwardly pleased when they are catching it for something they have done.

____ 42. I am often inclined to go out of my way to win a point with someone who has opposed me.

____ 43. The man who had most to do with me when I was a child (such as my father, stepfather, etc.) was very strict with me.

____ 44. When a man is with a woman he is usually thinking about things related to her sex.

____ 45. I do not try to cover up my poor opinion or pity of people so that they won't know how I feel.

____ 46. I have frequently worked under people who seem to have things arranged so that they get credit for good work, but are able to pass off mistakes to those under them.

____ 47. I strongly defend my own opinions as rules.

____ 48. People can pretty easily change my mind, even when I have made a decision about something.

____ 49. Sometimes I am sure that other people can tell what I am thinking.

____ 50. A large number of people are guilty of bad sexual conduct.

APPENDIX D

Social Coping Inventory

(Janke, Erdmann, & Kallus, 1985)

Social Coping Inventory

In the following you will find a number of possible ways in which you might react if you were disturbed, irritated, or upset by something or someone.

Please read these statements in order and decide which of the reactions given corresponds to *your* way of reacting. Rate each reaction based on the way you would likely react using the following scale:

0 = not at all

1 = hardly

2 = possibly

3 = likely

4 = very likely

When I am disturbed, irritated, or upset by something or someone.....

_____ 1) ..... I try to concentrate on something else

_____ 2) ..... I tell myself not to let myself go

_____ 3) ..... I make sure I find someone to support me in finding a solution

_____ 4) ..... I feel somewhat helpless

_____ 5) ..... I tell myself that I am not to blame

_____ 6) ..... I avoid contact with other people

_____ 7) ..... I tend to smoke much more or to start smoking again

_____ 8) ..... I will avoid such situations from now on

_____ 9) ..... I wonder what I have done wrong this time

_____ 10) ..... I tell myself that things are not so bad

_____ 11) ..... I carefully consider my next steps

_____ 12) ..... I try to relax my muscles

_____ 13) ..... I feel a little sorry for myself

_____ 14) ..... I tend to run away from the situation

_____ 15) ..... I tell myself I'm going to make it

_____ 16) ..... I can't think about anything else for a long time

_____ 17) ..... I am able to cope with the problem more quickly than other people

_____ 18) ..... I try to understand all the details of the situations

_____ 19) ..... I take tranquilizers

_____ 20) ..... I engage in some other activity

_____ 21) ..... I ask someone for advice about how to act

_____ 22) ..... I have something tasty to eat

_____ 23) ..... I think about it over and over again

_____ 24) ..... I tell myself I better get out of here

_____ 25) ..... I have a guilty conscience

_____ 26) ..... I tell myself to pull myself together

_____ 27) ..... I avoid other people

_____ 28) ..... I try to breathe calmly and regularly

_____ 29) ..... I will withdraw from such situations in the future as soon as they arise

_____ 30) ..... I tell myself that I don't have to feel guilty

_____ 31) ..... I tell myself that it will be all right in time

_____ 32) ..... I tend to give up quickly

_____ 33) ..... I tend to get into a fight with other people

_____ 34) ..... I deliberately think of times or situations when I was very successful

_____ 35) ..... I am dissatisfied with myself

_____ 36) ..... I watch something good on television

_____ 37) ..... I tell myself not to let this get me down

_____ 38) ..... I am glad that I am not as sensitive as others

_____ 39) ..... I take steps to eliminate the cause of the problem

_____ 40) ..... Thoughts of escape come into my mind

_____ 41) ..... I envy others to whom such things don't happen

_____ 42) ..... I just have to talk it over with someone

_____ 43) ..... I tell myself that it is not my fault

_____ 44) ..... I feel like throwing something against the wall

_____ 45) ..... I do something that distracts me from the problem

_____ 46) ..... I don't know how I can cope with the situation

_____ 47) ..... I try to succeed in something else

_____ 48) ..... I resolve to avoid such situations in the future

_____ 49) ..... I withdraw from everyone and everything

_____ 50) ..... I tell myself that time heals all wounds

_____ 51) ..... I have the feeling that luck is never on my side

_____ 52) ..... I tell myself that others wouldn't be able to cope with the situation as easily as I can.

_____ 53) ..... I tend to get drunk

_____ 54) ..... I try to fight my agitation

_____ 55) ..... I keep thinking about the situation for a long time afterwards

_____ 56) ..... I tell myself not to give up under any circumstances

_____ 57) ..... I blame myself

_____ 58) ..... I try to relax systematically

_____ 59) ..... I do things that I know I can handle successfully

_____ 60) ..... everything seems hopeless

_____ 61) ..... I attack people for no reason

_____ 62) ..... I just want to get away from the situation as quickly as possible

_____ 63) ..... I ask someone to help me

_____ 64) ..... I do something good for myself

_____ 65) ..... I think that I am not responsible for the situation

_____ 66) ..... I plan how to solve the difficulties involved

_____ 67) ..... I tell myself that everything will turn out all right

_____ 68) ..... I try to maintain my composure

_____ 69) ..... I make a mental note not to get myself into such situations again

_____ 70) ..... I sit down and have a glass of beer or wine or a shot of whiskey

_____ 71) ..... I tell myself not to lose confidence

_____ 72) ..... I just can't get it out of my head

_____ 73) ..... I try to withdraw from the situation

_____ 74) ..... I buy something that I've been wanting for a long time

_____ 75) ..... I tell myself it really was my fault all along

_____ 76) ..... I don't want to see anybody

_____ 77) ..... I have better control of myself than others would have in the same situation

_____ 78) ..... I bring out my best qualities

_____ 79) ..... I can't understand why I am always the one who has bad luck

_____ 80) ..... I look for something to cheer me up

_____ 81) ..... I do something to help myself relax

_____ 82) .....I become furious

_____ 83) ..... I tell myself that I have what it takes to handle the situation

_____ 84) ..... I need to get another person's opinion about the problem

_____ 85) ..... I try to keep my behavior under control

_____ 86) ..... I bury myself in work

_____ 87) ..... I search for my share of the blame

_____ 88) ..... I think it will all be forgotten by tomorrow

_____ 89) ..... I tend to think that there is no point to anything

_____ 90) ..... I take a sleeping pill

_____ 91) ..... I actively undertake to change the situation

_____ 92) ..... I just want to be alone

_____ 93) ..... I react with irritation

_____ 94) ..... I think that bad things always seem to happen to me

_____ 95) ..... I try to find approval in other areas

_____ 96) ..... I tell myself that I can cope with this

_____ 97) ..... I always calm down again faster than others do

_____ 98) ..... I make sure that such situations won't happen again in the future

_____ 99) ..... I think about something relaxing

_____ 100) ..... I go over the situation in my mind again and again

_____ 101) ..... I try to turn my attention away from the problem

_____ 102) ..... I try to talk with someone about the problem

_____ 103) ..... I grant myself something I've desired for a long time

_____ 104) ..... I think that I am not to blame

_____ 105) ..... I tend to give up

_____ 106) ..... I try to convince myself that it is not so important

_____ 107) ..... I feel that everyone gets on my nerve

_____ 108) ..... I tend to take medication

_____ 109) ..... I tell myself I must not lose my temper

_____ 110) ..... I can't get rid of my thoughts about the situation

_____ 111) ..... I try to distract myself

_____ 112) ..... I get angry

_____ 113) ..... I take it better than others would in the same situation

_____ 114) ..... I close my eyes and try to relax

_____ 115) ..... I try to get acknowledgment in other areas

_____ 116) ..... I try to understand exactly what factors led to the situation

_____ 117) ..... I ask myself why this had to happen to me of all people

_____ 118) ..... I think about how I might be able to avoid such situations in the future

_____ 119) ..... I think that it is not my fault that things turned out this way

_____ 120) ..... I just want to run away

APPENDIX E

Post Discussion Questionnaire

Post Discussion Questionnaire

Circle the number corresponding to your answers based on the previous discussion session.

1. How stressful did you feel the discussion was?

1	2	3	4	5	6	7
not at all			moderately stressful			extremely stressful

2. How much did you enjoy the discussion?

1	2	3	4	5	6	7
not at all			moderately enjoyed it			extremely enjoyed it

3. Did you want to leave the discussion at any point?

1	2	3	4	5	6	7
never			at times			frequently

4. How anxious were you during the discussion?

1	2	3	4	5	6	7
not at all			moderately anxious			extremely anxious

5. How angry were you during the discussion?

1	2	3	4	5	6	7
not at all			moderately angry			extremely angry

6. Did you feel support for your ideas during the discussion?

1	2	3	4	5	6	7
not at all			some support			a lot of support

7. How rejected did you feel during the discussion?

1	2	3	4	5	6	7
not at all rejected			moderately rejected			extremely rejected

8. How accepted did you feel during the discussion?

1	2	3	4	5	6	7
not at all accepted			moderately accepted			extremely accepted

VITA

Rachel Leigh Anderson was born on November 18, 1974 in Akron, Ohio. She was raised in Chester, Virgina and graduated from Thomas Dale High School in June, 1992. She entered The College of William and Mary in Williamsburg, Virginia in the Fall of 1992. At The College of William and Mary she majored in Psychology, with a minor in Sociology. In May, 1996, she received her Bachelor of Arts degree with High Honors. The following Fall, she entered The University of Tennessee, Knoxville and completed the requirements for the Master of Arts Degree in May, 1998.

Currently, she is pursuing a doctoral degree in Experimental Psychology at The University of Tennessee, Knoxville. Her research focuses on the relationship between personality, the social environment, and cardiovascular health.

Rachel is the daughter of David and Kathleen Anderson of Chester, Virgina. She has one younger brother, Peter, who is currently enrolled at Rensselaer Polytechnic Institute in Troy, New York.

In May, 1998, Rachel married Silvano Piferi of Knoxville, Tennessee.