

UNIVERSITY OF CALIFORNIA, SAN DIEGO

Psychological Mechanisms of Gender Differences in Social Support Use Under Stress

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in

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by

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2011

DEDICATION

It is only fitting that I dedicate this dissertation to my family and dear friends. Thank you for keeping me happy and healthy.

EPIGRAPH

I get by with a little help from my friends.
-Paul McCartney

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ABSTRACT OF THE DISSERTATION

Psychological Mechanisms of Gender Differences in Social Support Use Under Stress

by

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Professor Nicholas J. S. Christenfeld, Chair

Professor James A. Kulik, Co-Chair

Social support has been shown to confer health benefits by buffering stress, yet men use support much less than women. It is not known, however, which barriers prevent support use in men, and whether they apply only to seeking help or receiving help in general. The purpose of this dissertation is to explore support seeking, accepting, and effectiveness for men and women, and how gender differences in perceived costs and benefits of support govern these processes. Using an online survey, participants in Study 1a rated the stressfulness and available resources associated with hypothetical stressors when imagining facing them alone or with a friend. Participants perceived more resources available when imagining friends being present, yet for male subjects this was especially true when the friend was female. This gender pattern was more pronounced in

Study 1b, which enquired about helpfulness rather than availability of resources. Study 2a investigated actual help seeking behavior during a laboratory stressor and showed that men asked for help more from women than from men, while females requested help equally across genders. Participants in Study 2b were given a survey describing the stressor in Study 2a and estimated costs and benefits of asking for help. While there was no difference in perceived costs, such as embarrassment, men believed that other men would be less likely to give them requested assistance. The gender pattern in support use changed in Study 3, which assessed participants' rates of accepting freely offered help during a laboratory stressor. Females again accepted help equally across supporter genders, while men accepted help equally in one case and more from men in another. Finally, Study 4 examined how gender and social support influenced cardiovascular recovery following an emotional stressor. For both genders, emotional support facilitated greatest recovery, especially when it came from a same-gender source. Overall these studies found little evidence for gender differences in costs or effectiveness of support use, and emphasized gender differences in support seeking based on perceived availability. Overcoming these barriers in support seeking could have important implications for men's health and wellbeing.

Introduction

Quality and quantity of social contact are now well-established predictors of long-term health, affecting both morbidity and mortality (see House, Landis, & Umberson, 1988; Uchino, Cacioppo & Kiecolt-Glaser, 1996; Cohen, 2004; Cohen, 1988; Cobb, 1976; and Cassell, 1976 for reviews). The effect is robust and significant enough that social isolation is currently identified as a major risk factor for heart disease (House et al., 1988). While there is some evidence that social support benefits health indirectly by improving health behaviors, such as diet, exercise, and medication compliance (Berkman, 1995), the effects of social support hold even when controlling for health behaviors and initial health status (Uchino et al., 1996), suggesting that social support has direct effects on health.

One way in which support may improve health is through making stressful experiences less stressful, a theory known as the buffering hypothesis (see Cohen & Wills, 1985). Longitudinal studies have generally found support for the buffering hypothesis. Rosengren, Orth-Gomer, Wedel, and Wilhemsen (1993) interviewed a large sample of men over the age of 50 over the course of seven years, and found that those with a greater number of stressful life events had the highest level of mortality *only* if they did not have adequate social support. For those with strong supportive ties, mortality was the same as in those not experiencing stressful life events. Similar findings have been reported for other demographics, showing that, compared to people with similar stressors, those with adequate social support show lower incidence and severity of a variety of problems (Olstad, Sexton, & Sogaard, 2001; Lepore, 1992).

Despite the well-documented benefits of social support, it is not used to an equal degree by men and women, particularly when facing stress. Men consistently use support less than women to deal with major life events (Edwards, 1993; Taylor, 2000). In fact, use of social networks has been identified as the most robust difference in the way men and women cope with stress (Belle, 1987; Taylor, Klein, Gruenewald, Gurung, & Taylor, 2003). This includes both decreased usage of professional support services for problems ranging from physical illness (Green & Pope, 1999) to psychological dysfunction (Kessler, Brown, & Boman, 1981), and a decreased likelihood to mobilize personal support networks during times of distress (Padesky & Hammen, 1981).

This decreased use of support is not due to men receiving fewer benefits from it than women. In fact, research shows that men receive just as many health benefits from support as women, if not more (Taylor et al., 2003; House, Robbins, & Metzner, 1982; Kaplan et al., 1988). Positive spousal support has been shown to predict faster recovery for men following coronary bypass surgery (Kulik & Mahler, 1989) and lower rehospitalization in men after a myocardial infarction (Helgeson, 1991). In one large community sample of men, the greatest risk factors for cardiovascular disease were smoking and social isolation (Orth-Gomer, Rosengren, & Wilhelmsen, 1993). Lack of support use in men, then, can be very costly for health.

While it is clear that men use support less than women, why this occurs remains largely a mystery. The various possible barriers to using support have not yet received thorough empirical investigation. Using support is a process made up of various stages, and examining gender differences at each stage could help elucidate exactly which barriers men face. First, one must recognize a need for help. Next, one must determine

which type of support would be helpful, and whether others are able and willing to provide it. Then that support must be asked for. If help is freely offered rather than requested, one must decide whether or not to accept it. Finally, once help is given, it could range in its effectiveness in addressing the problem. It is possible that men and women could differ in any or all of these phases.

The research in this dissertation will explore gender differences during these stages of the support use process to better understand the barriers that men face in using support. A more thorough review of the literature related to each stage is saved for the individual chapters. A brief summary of each and how and why gender differences might emerge in that stage is presented here.

Support and Appraisal Processes

A better understanding of these gender differences is partially impeded by a limited knowledge of just how and why support buffers stress. The mechanisms through which support buffers stress remain largely a mystery (Lepore, 1998; Uchino et al., 1996; Cohen, 1988). It could be that support actually changes the nature of stressful situations by providing information or tangible resources (Cohen, 1988). However, research shows that support does not actually need to be received to have an effect; simply *perceiving* that more support is available predicts better adjustment to stress (Barrera, 1986; Bolger, Zuckerman, & Kessler, 2000; Cohen, 1992). In one study with college students, depression related to negative life events was buffered by perceived availability of support, while past support frequency was unrelated (Cohen & Hoberman, 1983). This suggests that knowing support is available confers benefits that are unique from the actual receipt of support. Support, then, may buffer stress at least partially by altering the

way individuals think about stressors and how they appraise stressful situations. Before examining differences in how men and women actually use support, it is important to explore how they differ in their perceptions of available support, and how this influences how they perceive stressful situations.

It has been postulated that social support could influence people's appraisals of their abilities to deal with stressful situations, yet there is little empirical investigation of such. Stress-related appraisals such as perceived control and self-efficacy are believed to interact with social support, but it is unclear exactly how (Langford, Bowsher, Maloney, & Lillis, 1997). According to Lazarus and colleagues (Lazarus, 1966; Coyne & Lazarus, 1980; Folkman & Lazarus, 1980), psychological responses to stressful situations are made up of two processes; primary appraisal, in which one assesses the actual demands of the situation and how stressful it appears, and secondary appraisal, in which one assesses the appropriate coping responses for the situation and the resources available to meet those demands, such as money, time, skills, etc. It is possible that gender differences in support use are partially driven by gender differences in these appraisal processes.

Differences in primary appraisal could lead to different perceptions of the need for support. Men, for example, may feel they need less help if they find situations less threatening than women do. There is some evidence for this. One study examining illness perceptions in men and women with cardiovascular disease found that men perceived their illness to be more treatable and less chronic than women did, and perceived greater control over their health than women (Grace et al., 2005). Women are also much more likely to report feeling emotional distress, anxiety, and depression than men (Nolen-

Hoeksema, 1990). If men do not feel as much stress as women do or believe that they are more in control of stressful situations, they may not think they need help from others.

It is also possible that support influences secondary appraisal, and does so differently for men and women. Having supportive others present would likely change the number of resources one feels is available to help address a stressful situation. There is, however, little research exploring how support availability influences secondary appraisal, or if men and women differ in social resource appraisal. It could be that women perceive having more social resources available to them than men do, in which case women would be more likely to actively seek out those resources.

The perception of available resources can be further broken down into appraisal of the resources themselves and the willingness of the provider. Believing that someone else's time and talents are available to address a stressor, for example, requires believing that those resources would be helpful, and also believing that the other person is willing to offer them. Gender differences could emerge in either of these processes. Men might feel that resources from others would be as helpful as women believe them to be, but believe that those people would be less likely to share those resources. Alternatively, men may believe that someone else's resources would simply be less helpful. To date, no studies have empirically tested how availability of social support influences resource appraisal, or how it may do so differently for men and women.

Support Use and Effectiveness

Appraisal of the availability of support can clearly influence whether or not support is used, yet there are potential barriers to support use distinct from the appraisal process. Even if men believe help is equally available to them, men may be less willing to

ask for help than women are. It has been suggested that actively seeking help carries greater ego costs for men than it does for women (Addis & Mahalik, 2003). Traditional socialized gender roles emphasize independence, toughness, and low emotional disclosure for men (Brannon & Davis, 1976; Good, Dell, & Mintz, 1989), all of which are in conflict with seeking formal or informal support. The costs incurred by seeking help could explain why men use it less than women. Research suggests that men will seek help only when the costs of not doing so are greater than the costs of asking. Men, for example, are more likely to use medical help for services that will restore gender role-type functioning, such as hard physical work or sexual activity (O'Brien, Hunt, & Hart, 2005). In this case, the costs of impaired functioning are greater than the costs of seeking help. It is not clear, though, what determines whether or not men will ask for help, and whether these criteria are different for men and women.

While research has explored active help seeking in men, no studies to date have examined help acceptance. Men may be less likely to actively seek help, but are they also less likely to accept freely offered help? Asking for help may incur ego costs, but it is uncertain whether accepting help would be associated with ego costs as well.

Alternatively, if men are averse to asking for help, they may rely on freely offered help. Men are more likely to use support when the support givers are women (Vanfossen, 1981; Cutrona, 1996; Komarovsky, 1974), which could be because women are more likely to offer help than men. Alternatively, asking women for help may be less costly than asking men.

It is also possible that men experience support differently than women. That is, when men receive emotional support, they may not feel as calmed or reassured as

females would in the same situation. It could be that using support in any form carries ego costs for men, even when they have not asked for or accepted it. Despite the long-term health benefits of support, receiving it may feel less effective or even distressing to men in the short-run. The effectiveness of support could also explain why men prefer support from females. Support from other men may be available, but men may feel that it would be less effective than that from females, or that using help from men would incur more costs.

As is suggested by many of these potential barriers, it is likely that support use is governed by an assessment of costs and benefits. Men and women will use support if the costs of obtaining it are outweighed by the potential benefits it brings. There are potentially ego costs in asking for help, which could be greater for men than for women, and which may or may not extend to accepting help or the process of receiving help. Other potential costs could include decreased perceptions of control or self-efficacy, which may apply more to men than to women. There could also be differences in men and women's perceptions of potential benefits, such as how effective help will be, if using support would actually increase control or self-efficacy, or how likely others are to provide the help one needs.

Because potential costs and benefits would likely change throughout different parts of the support process, it is possible that gender differences would not remain stable across them. If men perceive higher costs in asking for help, or believe their help requests would likely be rejected, gender differences should be most apparent in actively seeking help, but would not necessarily emerge when help is freely offered. If men perceive fewer potential benefits from using support, however, or perceive ego costs in using support in

any form, they may also decline offered help more often than women do. Finally, it could be that men use support less from other men not because of higher perceived costs, but because it is actually less effective and yields fewer benefits. A thorough investigation of gender differences across different stages of support use is needed, and could help elucidate which barriers prevent men from using this beneficial resource.

Dissertation Aims & Outline

This dissertation will explore gender differences in different parts of the support use process, namely support appraisal, active help seeking, support acceptance, and effectiveness of support receipt. Each of these processes will also include an investigation of potential costs and benefits of support use, with a specific aim of determining how these may differ between men and women.

This examination of gender differences in all parts of the support process will potentially show which barriers prevent men from using support. If, for example, men use support less because they believe it is not helpful, one would expect to see them perceive resources available, but not ask for them and not accept them when offered. Contrarily, if men believe that support is helpful but simply unavailable, they might request help less but should accept it just as often as women. Finally, if receiving support in any form is costly for men, even when it is not requested, they should experience fewer benefits from it than women.

Chapter 1 will explore the effects of social support on resource appraisal for men and women, with a focus on the gender of potential helpers. The aim of this study is to determine how men and women appraise stress and available resources when support is and is not available, and when it is available from different sources (males vs. females).

This will also include an investigation of whether men and women perceive resources to differ in availability (Study 1a) and/or helpfulness (Study 1b). This can provide a better understanding of the possible benefits males and females perceive in using support.

These studies will not directly measure differences in whether or not men and women believe they need help, though they will investigate a related construct of how stressful men and women would find given situations.

Chapter 2 will examine actual help seeking behavior in the laboratory. Again this will include support from helpers of different genders to more directly investigate how this influences men and women's help seeking behaviors. This study will also include monitoring of cardiovascular reactivity to determine whether help requests are associated with cardiovascular benefits or costs. This study will show whether men and women, when presented with an identical stressor, will differ in how often they ask for help, and whether their choice to ask for help is influenced by the gender of helpers. Separate participants (Study 2b) will also be asked to predict more specifically the potential costs and benefits to seeking help in such a situation.

The study in Chapter 3 will examine gender differences in acceptance of freely offered support. This study will explore whether appraisal processes such as perceived control and self-efficacy predict whether or not participants will accept help, and whether or not accepting help can in turn influence these appraisal processes. Help in this study will be offered both by males and by females in order to determine whether patterns of help seeking seen in men and women are paralleled by their patterns of accepting support.

Finally, Chapter 4 will explore the potential costs and benefits of purely receiving support, without having to choose to use it. Physiological reactivity will again be monitored to determine whether men and women benefit equally from support received following an emotional stressor. Additionally, different types of support will be used in order to explore which types of support better facilitate physiological recovery from stress, or if they do so differently for men and women. Both male and female helpers will again be used to determine if patterns in help seeking (such as men preferring to use support from women) are based on the efficacy of the support, or are governed by other processes. Together, these studies can provide a more complete profile of gender differences in support use, and highlight more precisely where in the process gender differences occur and which perceived costs and benefits lead to such differences.

Chapter 1 – Studies 1a and 1b

Introduction

As research continues to show a robust positive relationship between social support and health (House, Landis, & Umberson, 1988; Uchino, Cacioppo & Kiecolt-Glaser, 1996), researchers have been exploring what drives this relationship. One key theory that has been the subject of much research lately is the buffering hypothesis, which states that social support improves health by reducing the negative effects of stress (Cohen & Wills, 1985). Stress has been shown to have serious consequences for health (Herbert & Cohen, 1993; Segerstrom & Miller, 2004), thus anything that attenuates stress could potentially be health protective.

Longitudinal studies have generally found support for the buffering hypothesis. Rosengren et al. found that significant stress increased mortality over the course of seven years for middle-aged men *only* if those men did not have sufficient social support (Rosengren, Orth-Gomer, Wedel, & Wilhemsen, 1993). Increased support following hospitalization for a cardiac incident has been found to decrease chance of readmission in the year following (Bennett et al., 2001) and significantly decrease six-month mortality following myocardial infarction (Berkman, Leo-Summers, & Horwitz, 1992). Importantly, buffering effects remain significant even when controlling for personality variables. Thus it is not simply that agreeable, optimistic people have better support and better health, but rather that social support itself plays a health-protective role (Uchino et al., 1996). The mechanisms but which this occurs, however, remain largely a mystery (Lepore, 1998; Uchino et al., 1996).

Because better adjustment to stress is predicted by simply perceiving that support is available (Barrera, 1986; Bolger, Zuckerman, & Kessler, 2000; Cohen, 1992), it seems likely that support buffers stress at least partially by altering cognitive appraisal of stressors and not just by altering stressful situations. As described previously, cognitive responses to stress are believed to be made up of two processes; primary appraisal, in which one assesses the actual demands of the situation and how stressful it is, and secondary appraisal, in which one assesses the appropriate coping responses for the situation and the resources available to meet those demands (Lazarus, 1966; Coyne & Lazarus, 1980; Folkman & Lazarus, 1980). The extent to which available resources can meet the demands of the situation determines how threatening the situation will be. These resources can be active resources, which are used to address the situation itself (problem-focused coping), or passive resources, which address one's emotional response to the situation (emotion-focused coping) (Folkman & Lazarus, 1980; Pearlin & Schooler, 1978).

It is possible that social support influences psychological responses to stress by influencing these appraisal processes. Support may influence primary appraisal, decreasing what individuals feel is at stake in the situation. In this case those receiving support would perceive tasks to be less stressful than those completing them without support. While this result was found in one study (Smith, Ruiz, & Uchino, 2004), several others found that those receiving support rated the task to be equally as stressful as those not receiving support (Lepore, Allen, & Evans, 1993; Kamarck, Annunziato, & Amateau, 1995). A more likely option is that support influences secondary support by altering the number of resources individuals feel they have at their disposal. Those facing stressors

with friends may feel that the friend's resources are available to use in addition to their own.

It is possible that support affects appraisal processes differently for men and women. Men and women show robust differences in their use of social support, with females consistently using social networks more than men (Taylor et al., 2000). In fact, this difference is so pronounced it has been identified as the main difference in the way men and women respond to stress (Taylor, Klein, Gruenewald, Gurung, & Fernandes-Taylor, 2003). However, research has not identified why this discrepancy occurs. It could be that support influences primary or secondary appraisal for women in a way that makes support more valuable than it is for men. For example, men may use support less because it does not increase their perception of available resources the way it does for females. Alternatively, men could perceive mostly active resources available from others, while females may perceive passive resources. A better understanding of how support affects appraisal for men and women could help explain why men use this health-promoting resource less than women.

Appraisal of stress and coping resources also depend largely on exactly what is at stake (Folkman, Lazarus, Dunkel-Schetter, DeLongis & Gruen, 1986). That is, while stress can generally be described as perception of a threat, there are many different classifications of threats, and coping will likely differ from one to the next. Folkman and colleagues (1986) have identified six general categories of stressors commonly seen among participants: a) threats to one's own wellbeing, b) threats to one's self-esteem, c) threats to the wellbeing of a loved one, d) financial strain, e) excessive work tasks or not achieving success at work, and f) loss of respect for one close to you. While studies have

shown that support can buffer stress in general, they have not examined which types of stress were best helped by social support or which types of support were most helpful. Just as coping strategies likely differ between types of stressors, it is likely that support will be used differently from one stressor to the next. Support may be more effective with certain stressors, or active support may buffer more effectively for particular stressors than passive support, and vice versa.

As support has shown such marked salubrious effects, it is important to gain a better understanding of just how and why it buffers stress, and in which situations. The purpose of the following studies was to examine how imagining going through a hypothetical stressor with or without a friend influenced primary and secondary appraisal of those situations. Also of key interest was whether appraisal was affected differently based on the type of stressor or the types of resources (active or passive) perceived to be available, and how these processes differed for male and female subjects. While it has been shown that men actively seek support less than women, it is unknown if this is due to higher perceived costs of asking for help, or fewer perceived benefits of receiving it. An assessment of how the presence of support influences primary and secondary appraisal processes could help elucidate possible gender differences in perceived benefits of support. If women perceive more resources being available with a friend present than men do, for example, it could suggest that men believe support offers fewer benefits than women. A better understanding of how support influences these appraisal processes could help explain how support buffers stress, and how it may do so differently for men and women.

Study 1a

Methods

Participants. Participants were 713 undergraduates (464 female) at a large western university, ranging from 18 to 25 years old. Participants were primarily Asian (54.4%), Caucasian (19.6%), and Latino (11.4%), with the rest being Pacific Islander (2.4%), Black (0.8%), “other” (6.9%) or declining to comment (4.5%). Course credit was offered in exchange for participation.

Measure. Participants were given an online survey consisting of 12 hypothetical stressful situations written in the second person. The participant was instructed to imagine him or herself in the scenario experiencing the described events. Each scenario was designed to capture one of Lazarus’ six different types of stressors: 1) threats to one’s own wellbeing, 2) threats to one’s self-esteem, 3) threats to the wellbeing of a loved one, 4) financial strain, 5) excessive work tasks or not achieving success at work, and 6) loss of respect for one close to you. There were two hypothetical scenarios for each type of stressor. Scenarios were presented in random order.

After reading the scenario and imagining going through it, participants were asked to rate on Likert-type scales how stressful they found the situation (ranging from 1, *not at all stressful* to 6, *extremely stressful*). This measure was labeled as primary appraisal of the situation. Lazarus defined primary appraisal as an assessment of what was at stake, and the stressfulness of the situation. The question of exactly what is being threatened is captured by the manipulation check, and it is unlikely that the presence of a friend would influence this. Thus, for the present study, primary appraisal will be measured by perceptions of the stressfulness of the situation.

To assess secondary appraisal of coping resources, participants were given a list of 18 possible coping resources they could use to address a stressful situation. Half of these were the participant's own resources (e.g. "your own money and material resources"), and half were those of a friend (e.g. "friend's ability to stay calm"). Also, roughly half of these were active resources while the other half were passive (see Appendix 1 for a complete list). Participants were asked to check off as many resources as they felt would "be available to help them deal with the situation."

Procedure & Experimental Manipulation. The experiment was conducted online. After signing a consent form, participants were randomly assigned to imagine going through the stressful scenarios in one of three ways: 1) alone, 2) with a close female friend, or 3) with a close male friend. Those in the alone condition were told simply that they would read about hypothetical stressful situations and should imagine themselves going through each one. Those in the friend conditions were told they would read about hypothetical stressful situations, and that in each they would be with a close male friend or close female friend, depending on condition. They were instructed to take a moment to think of a particular friend of that gender and imagine going through each scenario with them. Participants all read identical scenarios. At the end of each scenario participants were told they were now trying to figure out how to address the situation, either alone or with that friend (depending on condition).

All participants were given identical checklists of potential resources, presented in random order. The identity of the friend providing resources to address the stressor was never specified. Those in the alone condition were still given the same checklist of their

own or a friend's resources, as they could perceive resources available from friends who were not going through the scenario with them.

At the end of the survey, those in either of the friend conditions were asked to indicate 1) how helpful they felt their friend's resources would be, 2) how willing they felt their friend would be to offer their resources, 3) how willing the subject would be to ask their friend for any resources, and 4) how likely they would be to accept a friend's offer of resources to help them address the situation. All were answered on a Likert-type scale from 1 (*not at all*) to 6 (*extremely*).

Manipulation Checks. To ensure that each scenario captured the intended type of stress, after each scenario participants indicated exactly what was stressful about the scenario, choosing from the list of the six stressor types.

Data Reduction and Analysis. For each of the 12 scenarios, the number of resources each participant felt would be available to help them was tallied. Within the tally of total resources, a separate count was taken for "own" vs. "friend" resources. These categories were also broken down into tallies of active and passive resources, that is, resources (from the subject or their friend) that could alter the situation (active) or that could alter their emotional response to it (passive). In the end, each subject had a tally of active and passive self resources and active and passive friend resources for each of the 12 scenarios. The experimental condition referred to whether subjects imagined the scenario with a male friend, female friend, or alone.

For analyses of condition effects, it was important to know specifically which conditions differed from each other and how. This information is not captured by an ANOVA, which shows only whether condition had an effect overall without specifying

how or which conditions. Consequently, for each analysis of the effect of condition, planned pairwise comparisons were performed between conditions. As this analysis is somewhat exploratory, pairwise comparisons were only performed if an ANOVA first showed at least a marginal main effect of condition in order to protect against alpha escalation.

For all analyses, data was also divided by gender and analyzed for males and females separately in order to more thoroughly investigate how each gender experienced the different conditions and different types of stressors. Because men and women show such different patterns in support use, it was essential to look at each gender separately to gain a more complete understanding of how support influenced their resource appraisal. As stated earlier, men appear to be more comfortable receiving support from women than from men, which could be influenced by differences in resource appraisal with men and women helpers. Gender of support giver, however, may be unimportant to females. Dividing the data by gender allowed for pairwise comparisons between conditions for male subjects and female subjects separately, which in turn could show separately the factors that influence men and women's resource appraisal.

Results

Manipulation Check. As described above, participants were asked to choose from a checklist exactly what about the situation was stressful. In most cases, the vast majority of subjects chose the intended type of stress. Some, however, were evenly divided between several types of stress. Because there were two scenarios for each type of stressor, the scenario with the highest percentage of subjects choosing the correct type of stress was chosen to represent each stressor type, eliminating half the scenarios. There

was no difference in results if all scenarios were used and averaged over stressor type. To ensure greater accuracy, only the scenario with the highest accuracy rating was used for each type of stressor. Table 1 shows which type of stressor they felt each of the six chosen scenarios represented.

Subjects indicating the scenario conveyed the intended type of stress are as follows: Threat to loved ones (96%), loss of respect for one close to you (89%), threat to one's self-esteem (73%), excessive work (83%), financial concerns (94%), and threat to one's own wellbeing (85%). These ratings are all reasonably high, with only one (threat to self-esteem) below 80%, thus the manipulation of stressor type appears to have been successful.

Primary Appraisal – Stress

Condition. An ANOVA was used to determine whether ratings of the stressfulness of scenarios differed by condition (alone, male friend, female friend). The data showed no significant effect of condition on the amount of stress participants reported they would feel overall, $F(2, 710) = 0.41, p = 0.67$.

Gender. To assess the effect of subject gender on primary appraisal, a repeated measures ANOVA was used with stressfulness in each scenario as the within subjects variable and gender as the between subjects variable. Overall, women felt the scenarios were significantly more stressful than men ($n = 249$), $F(1, 711) = 31.95, p < .001$.

Gender x Condition. An ANOVA was performed to determine whether condition influenced overall stressfulness of situations differently for men and women. There was no interaction of gender and condition on overall ratings of stressfulness.

Stressor Types. Primary appraisal was tested separately for each type of stressor to see if appraisal changed with type of stressor.

Condition. For all six stressor types, stressfulness of the situation did not differ by condition.

Gender. For five of the six stressor types, females found the situation significantly more stressful than males (for all $p < .01$). The only exception was threats to self-esteem, which males and females found equally threatening.

Secondary Appraisal – Resources Available

Condition. A repeated measures ANOVA was run with stressor type as the within-subject factor and condition as the between subjects factor, and resource tally as the dependent variable. Figure 1.1 shows the total amount of resources participants felt were available to them, broken down by gender and condition. Within each category they are broken down further by the source of the resource (self vs. other) and the type of resource (active vs. passive).

Total Resources. The repeated measures ANOVA showed a significant effect of condition on total number of resources available, $F(2, 710) = 14.77, p < .001$. Pairwise comparisons showed that those in the female friend condition and in the male friend condition both had significantly more resources than those in the alone condition ($t(710) = 5.14, p < .001$ and $t(710) = 4.07, p < .001$, respectively). The male friend and female friend conditions did not differ significantly from each other.

Self vs. Other Resources. There was no main effect of condition on the number of the participants' own resources they felt were available. There was also no effect of

condition on participants' own resources when they were broken down into active and passive resources.

There was, however, a significant difference in the number of others' resources available based on condition, $F(2, 710) = 52.07, p < .001$. Pairwise comparisons mirrored the findings from the number of total resources, with those in both of the friend conditions perceiving significantly more resources available from others than those in the alone condition ($t(710) = 8.98, p < .001$ and $t(710) = 8.68, p < .001$, respectively). There was no difference between those imagining female friends and male friends. This pattern was again repeated for both active and passive resources from others (for both $p < .001$).

Participant Gender. A repeated measures ANOVA was used to compare resource tallies, using stressor type as the within subjects variable and gender as the between subjects variable.

Total Resources. There was no difference in the total amount of resources men and women felt were available to help deal with the situations.

Self vs. Other Resources. Men felt they had significantly more of their own resources to use compared to women, $F(1, 711) = 11.66, p = .001$. Females, on the other hand, felt they had more resources from others compared to males, $F(1, 711) = 3.80, p = .05$. A repeated measures ANOVA showed the interaction of gender and resource source (self vs. other) on perceived number of resources was significant, $F(1, 711) = 34.31, p < .001$.

When further broken down into active and passive resources, the data showed that males felt they had both more of their own active resources and more of their own passive resources to rely on than females did (for both, $p < .01$), and were also marginally

higher than females in the number of active resources they perceived available from others, $F(1, 711) = 2.93, p = .088$. Females, however, perceived significantly more passive resources available from others than males did, $F(1, 711) = 11.40, p = .001$.

Gender x Condition. In order to explore how condition affected resource appraisal for males and females separately, the file was divided by gender and repeated measures ANOVA's were performed for males and then females. Scenario was used as the within subjects variables, and condition was the between subjects variable.

For women, condition had a significant effect on their total number of perceived resources, $F(2, 461) = 11.41, p < .001$. Those in the female friend and male friend condition both had significantly more than those in the alone condition (for both $p < .001$), but did not differ from each other. Condition also had a significant effect on total number of resources for males, $F(2, 246) = 3.95, p = .02$. Males imagining stressors with a female friend felt they had significantly more resources available to them than those imagining it alone, $t(246) = 2.82, p = .005$, but imagining going through the same stressors with a male friend lead to only marginally more total resources than being alone, $t(246) = 1.77, p = .077$. The difference between the male and female friend conditions was not significant for male subjects.

Stressor Types. Secondary appraisal was tested separately for each type of stressor to see if appraisal changed with the demands of the situation.

Condition. For all six stressors, condition had a significant effect on the total number of resources participants felt were available to them ($p < .01$ for all). In each case, those in the female friend condition and the male friend condition both had significantly more than those in the alone condition ($p < .01$ for all), and the male and female friend

conditions did not differ from each other. Condition did not have an effect on the number of participants' own resources they felt were available for any of the stressors.

The effect of condition was similar when examining female subjects separately (Figure 1.2). Females felt they had greater total resources available in the female friend condition for all stressors (for all $p < .01$) except threats to others, for which they offered marginally more resources than being alone ($t(461) = 1.87$ $p = .062$). Females felt male friends offered more total resources than being alone for all stressors (for all $p < .01$) except threats to others, which was no different than being alone. When looking only at resources from others, male and female friends offered significantly more resources than being alone and did not differ from each other for all stressors.

Male subjects were somewhat different (Figure 1.3). Generally, males felt they had the most total resources available when female friends were present. For four of the stressors (excessive work, threats to loved ones, financial strain, and loss of respect), having a female friend present offered significantly more total resources than being alone (for all $p < .05$). Conversely, there were no stressors for which males felt that having a male friend present offered significantly more total resources than being alone. For two of the stressors (excessive work and loss of respect), having a male friend offered only marginally more resources than being alone ($p = .062$ and $.052$, respectively), and for the other four having a male friend present was no different than being alone. Looking only at resources from others, both friend conditions offered significantly more resources than being alone and did not differ from each other for all stressors.

Gender. For all six types of stressors, males and females did not differ in the total amount of resources they felt were available to them. Males generally felt they had more

of their own resources to use; this was true of threats to loved ones, loss of respect, threats to their own wellbeing, and threats to self-esteem (for all $p < .01$). Males scored marginally higher than females on own resources for financial strain and excessive work (for both $p < 0.1$). The gender difference in own resources was mainly driven by males feeling they had more of their own *passive* resources than females, which was true of all stressors except threats to own wellbeing (threats to self-esteem was marginal; for all others $p < .05$).

Males perceived having significantly more of their own active resources available for half of the stressors; threats to own wellbeing, threats to others, and threats to self-esteem (for all, $p < .03$). Active resources from others only differed for one stressor, threats to others, of which males perceived having more ($F(1, 711) = 5.93, p = .015$).

For all six stressors, females perceived having more passive resources from others. This was significant for all ($p < .05$) except for loss of respect for others, for which the difference was marginal ($F(1, 711) = 2.82, p = .094$).

Predictions of Asking, Offering, and Accepting. Questions asking the friend's willingness to offer help and the subject's likelihood to ask for it were only asked to those in the friend conditions, thus the alone condition was not included in analyses. There was no difference between those in the male friend condition and female condition for any of the four variables; how helpful the friends resources would be, how likely the friend would be to offer help, how likely the subject would be to ask for helpful resources, and how likely the subject would be to accept offered resources.

Subject gender had a significant influence on predictions of friends offering help, with female subjects feeling their friends would be significantly more likely to offer help

than males, $F(1, 466) = 4.46, p = .035$. There was no difference between male and female subjects for the other variables.

There was a marginal interaction of subject gender and condition on willingness to ask for help, $F(1, 466) = 3.40, p = .066$. Data show that females would be more likely to ask for help in the female friend condition, while males indicated they would be more likely to ask for help in the male friend condition.

Discussion

Overall, condition did not have any significant effects on primary appraisal. Stressfulness of situations generally did not differ based on who the subject imagined being with.

Condition did, however, have significant effects on secondary appraisal. The data show that those imagining going through stressful situations with a friend present – either male or female – consistently felt they had more resources available to them to address the demands of the situation. Generally the presence of a friend did not influence the number of the subjects' own resources they felt were available. Rather, it significantly increased the resources subjects felt were available from others. This suggests that individuals going through stressors with friends present do not necessarily appraise fewer of their own resources, they simply see resources from a present friend as additional to what they already have.

There is no good reason to believe that the friends chosen by those in the male or female friend condition are any more capable than the friends of participants in the “alone” condition; the difference was simply whether or not they imagined them being present. The data suggest that their simple presence may have been the most useful thing

friends offered, as the largest difference between those in the friend conditions and alone condition was the number of passive resources they perceived being available from others. Ultimately, when it comes to active resources such as money or time, it appears that individuals may prefer to use their own rather than those of a friend.

There was, however, still a significant difference between conditions in the number of active resources participants perceived being available from friends, with those in the “friend” conditions again having significantly more than those in the “alone” condition. This highlights the barrier of having to actively seek help from friends who are not already present. The resources of friends not present during the stressor could also be used, as evidenced by those in the alone condition still perceiving *some* resources from others available, yet the fact that they perceived less of them suggests that having to seek those resources decreases their perceived availability. When it comes to asking for time, money, etc., it seems participants are more comfortable doing so when a friend is already present. It is also possible that participants perceive resources from present friends as more available than absent friends because present friends might actually offer help without being asked.

Men and women differed significantly in primary appraisal; overall, women found situations more stressful than men did. This was true regardless of whom they were with. This supports existing literature showing that women generally feel less control and more stress over things like health (Grace et al., 2005) and jobs (Roxburgh, 1996). Such attitudes could underlie the large gender difference in mood disorder diagnoses, with females far outnumbering males particularly for depression (Nolen-Hoeksema, 1990).

Given the same situations, females feel more stress, which could contribute to development of depression.

As Figure 1.1 shows, generally male and female subjects were quite similar in their patterns of resource appraisals. The data do show notable differences, however. Overall males were significantly higher than females in three of the four resource types; own passive resources, own active resources, and active resources from others. Females, however, perceived significantly more passive resources from others to be available to them, enough so that there was no difference between male and female subjects in the number of total resources they felt were available to help them. It is unclear if females see passive resources being available where males do not, or if males felt they needed fewer passive resources from others than females because their total number of other resources was greater. Since males scored significantly higher in their own passive resources than females, it could be that they felt they could sufficiently regulate their own emotional response to the situation. Thus, while passive resources from others may have been available, they would not be seen as very helpful.

While males and females did not differ in predictions of how likely they would be to ask for help or receive help, females felt their friends would be more likely to offer help. This predicted offered help could explain the gender difference in passive resources perceived to be available from others. Females suggested they would be slightly more likely to ask female friends for help while males suggested they may ask male friends more; however, if male subjects showed any bias towards one gender in terms of perceived available resources, males appeared to perceive more resources available when with female friends (see Figure 1.3).

It is difficult to know what is driving this effect. It could be that males feel that female friends would be more likely to offer their resources than male friends, yet when directly asked, males indicated they thought males and females would be equally likely to offer. Males suggested they would equally accept help from male and female friends, and felt males and females would offer equally beneficial help. It is unclear, then, why for male subjects female friends were consistently associated with more available resources than being alone while male friends were not. It could be that men and women are poor predictors of their own behavior, or of how helpful a friend's resources would really be.

One drawback of the current data is it cannot differentiate between the availability of resources and their helpfulness. It could be, for example, that men perceive resources from male and female friends as equally available, but those from females are perceived as more helpful. Alternatively, resources from males and females could be seen as equally helpful, but males could perceive resources from other men as being less available to them. While the current study asked participants to indicate which resources they felt were available, they may not have counted resources that were available, but not helpful. Asking only about the helpfulness of resources, without considering their availability, could help explain the source of the gender difference in resource appraisal.

Study 1b

To help address this question, a second survey was given to another group of subjects. The survey was almost identical to the first, but rather than asking which resources were available, subjects were asked which resources would best help them. This question emphasized the helpfulness of the resources, but did not consider whether or not they were actually available. Should men consider resources from males and

females to be equally helpful, it could suggest that they perceive resources from male friends as less available.

Methods

Participants. Participants were 445 undergraduates (289 females) at a large western university ranging from 18 to 26 years old. They were mostly Asian (49.4%), Caucasian (26.3%), and Latino (11.2%), with the rest being Black (0.7%), Pacific Islanders (1.8%), “Other” (7%), or declining to answer (3.6%). Participants received course credit in exchange for participation.

Measures & Procedure. Participants were given an online survey with the same hypothetical situations as those in Study 1a. Instructions, conditions, and resource options were all the same as in Study 1a. The only difference was rather than checking off which resources would “be available to help (them) deal with the situation,” subjects were asked to check off which resources “would best help (them) deal with the situation.”

Results

As the only difference between Studies 1a and 1b was in the question about resources, only those data are presented here. Questions about stressfulness were asked, but were identical to Study 1a, and consequently that data will not be shown.

Total Resources. An ANOVA was used to determine whether condition influenced the total number of resources participants felt would best help them address the stressors. Results showed the same pattern as Study 1a. There was an overall effect of condition on total resources, $F(2, 439) = 17.56, p < .001$. Again those in the female friend and male friend condition both had significantly more resources than those in the alone

condition ($p < .001$ for both), yet were not significantly different from each other. This pattern was the same for all stressor types.

This pattern was also seen for all stressor types when examining females separately. For males, being with a male friend lead to significantly more total resources than being alone for three of the stressors (threats to self, excessive work, and threats to self-esteem; for all $p < .05$). For other stressors it was either marginal (financial strain and loss of respect) or non-significant (threats to others). Female friends were associated with significantly more total resources for all stressors. There were no differences between the male and female friend conditions for total resources.

Own Resources. There was no effect of condition on subjects' perceptions of how many of their own resources they felt could help them. Men and women also did not differ in the number of their own resources they felt could help them.

Others' Resources. Like in Study 1a, those with male and female friends present checked off more resources from others than those who imagined being alone (for both $p < .001$), and did not differ from each other. This pattern was the same when looking only at female subjects, who also showed this pattern when looking at only active or only passive resources. Also like in the first study, for male subjects the male and female friend conditions were both greater than the alone condition (for both $p < .001$). However, unlike Study 1a, these two conditions differed significantly from each other. The number of helpful resources in the female friend condition was significantly greater than in the male friend condition, $t(153) = 2.08, p = .04$.

Broken down by resource type, males felt that both male and female friends offered more passive resources than being alone (for both $p < .001$), but the female friend

condition was also marginally greater than the male friend condition, $t(153) = 1.87, p = .064$. The male friend and alone conditions did not differ in overall active resources, while the female friend condition offered significantly more active resources than both the alone and male friend conditions (for both $p < .05$).

Looking at each type of stressor, females again showed the typical pattern of both friend conditions having more resources than alone but not being significantly different from each other (Figure 1.4). For males, male and female friends both offered significantly more resources than the alone condition for all stressors (for all $p < .001$), but female friends were also associated with significantly more resources than the male friend condition for excessive work, threats to self, and threats to a loved one (Figure 1.5) (for all $p < .05$).

Discussion

For female subjects, data from Study 1b closely mirrors that of Study 1a. Again female subjects showed no preference for male or female friends; the gender of the friend they imagined did not influence the number of resources from others they thought would best help them address the stressor. Both male and female conditions were significantly greater than the alone condition for all stressor types.

For males, however, there were noteworthy differences from Study 1a, not in direction but in magnitude. When the helpfulness of the resources was emphasized, those in the female friend condition checked off significantly more resources than those in the male friend condition. In the previous study, when availability was emphasized, this difference was small and was only a trend. That this difference was significant in Study 1b and not Study 1a is further emphasized by the fact that there were far fewer subjects in

Study 1b. Study 1b therefore had less power, but still found an effect where Study 1a did not. This suggests that differences in resources appraisal for men when with a female friend versus a male friend may be based on the helpfulness of the perceived resources rather than their availability. Males may perceive resources from other males as being just as available, but less helpful.

The data do suggest, however, that availability is still taken into account. If availability was truly not an issue, those in the alone condition should have marked just as many resources from others as those in either of the friend conditions. It is unlikely that those in the alone condition have friends who are any less helpful than those in the other conditions. The only foreseeable reason that those in the alone condition would see a friend's resources as less helpful would be if those resources were less available.

Also, one might expect the greatest difference in the helpfulness of resources between male and female friends to be in passive resources, as females are continually shown to be more empathetic than men and thus may provide more helpful emotional support (Trobst, Collins, & Embree, 1994). However, this difference was only marginal. The greatest difference was actually seen in active resources from male and female friends, with men perceiving more helpful active resources coming from females. It is possible that this reflects a true difference in perception of helpfulness of these resources - that men believe that women do provide more useful skills, work, time, and money than men do. This seems unlikely, however, as money should be equally as helpful regardless of the source. It is likely, then, that participants still consider the availability of a resource when they determine whether or not it would be helpful. For men, resources from females appear to be more available than those from males.

General Discussion

Studies 1a and 1b show that the imagined presence of friends during hypothetical stressors can significantly influence secondary appraisal processes. Those imagining facing stressors with friends present consistently felt they had significantly more resources available to them to address the demands of the situation than those who imagined facing the stressor alone. However, even those in the alone condition indicated they had resources available from social others in addition to their own, showing that social support, even when not actually present during a stressor, can influence secondary appraisal by providing additional resources. Again, while Lazarus' description of resources emphasized one's own time, money, and skills, this shows that the time, money, skills, etc. of social others should also be considered when describing resources for addressing stressors.

These data also show that the secondary appraisal process is quite different for males and females facing stressful situations. While both found that the immediate presence of a friend added additional resources, for males the number of helpful resources available depended on the gender of the present friend. Males may not be overtly aware of this bias towards female friends, as in Study 1a they suggested that they would be equally as likely to ask for and accept help from male and female friends, and predicted that the help of male and female friends would be equally offered and equally helpful. It is still not clear, then, what men are biased towards; females' resources being more helpful, more likely to be offered, or whether asking female friends for help is simply less threatening for men than asking male friends for help.

Whatever the case may be, these data point to a potential partial explanation for males' decreased use of social support during stress (Taylor et al, 2000), namely the gender makeup of their social circles. Again, males who imagined being with female friends felt that there were just as many resources from others that could help them address the situation as females did. It was only when imagining being with a male friend that males perceived having no more resources available than when they were alone. If males' social circles predominantly, or even partially, comprise other males, these data suggests they would be less likely to use social support during stress, while females would use social support regardless of the gender makeup of their social circles.

It is uncertain how this would apply to formal sources of support, such as physicians or therapists. Research suggests that gender preferences depend on the nature of the help; for general medical practice, males prefer male practitioners, but prefer a female nurse or social worker and express no gender preference for psychiatric services (Kerssens, Bensing, & Adela, 1997). In this context the question of whether or not support would be offered is eliminated, which could minimize the male bias towards female support. These data could also have important implications for formal support groups, which are often gender-segregated. While this gender segregation allows participants to focus on shared experiences with other participants, it could be detrimental to males if they feel that resources from females would be more helpful. It is worth exploring whether mixed gender support groups would be more helpful for males than male-only groups.

It has been suggested that males seek help less often due to potential ego threat incurred by violating socialized gender norms (Addis & Mahalik, 2003). This could be

why males find resources from others less helpful than females; they face the barrier of having to ask for them. It is not clear, however, why this would apply more to male friends more than female friends. Again it could be that males believe their female friends may be more willing to offer help, thus circumventing the need to ask for it. More research is needed to determine how gender of potential helpers influences resource appraisal for males, both in informal and formal helping contexts, and how their use of support is affected by having to seek or accept offered help.

Chapter 1, in part, is being prepared for submission for publication of the material. Larsen, B.; Christenfeld, N. The dissertation author was the primary investigator and author of the material.

Table 1.1

Percentage of Participants Selecting Each Stressor Type as the Main Threat in Hypothetical Stressful Scenarios

Intended stressor type:	Main threat perceived by participants (%)					
	Threat to self-esteem	Loss of respect	Threat to a loved one	Financial strain	Work-related threats	Threat to own wellbeing
Threat to self-esteem	73.2%	14.9%	0.8%	1.1%	0.3%	9.5%
Loss of respect	2%	88.9%	4.1%	3.1%	0.4%	1.4%
Threat to a loved one	0.3%	1.7%	95.5%	0.6%	0.8%	0.8%
Financial strain	1.5%	0.7%	1.3%	93.8%	1.3%	1.3%
Work-related threats	2.2%	0.8%	1.0%	2.1%	90.2%	3.5%
Threat to own wellbeing	1.1%	0.3%	7.1%	1%	0.8%	89.4%

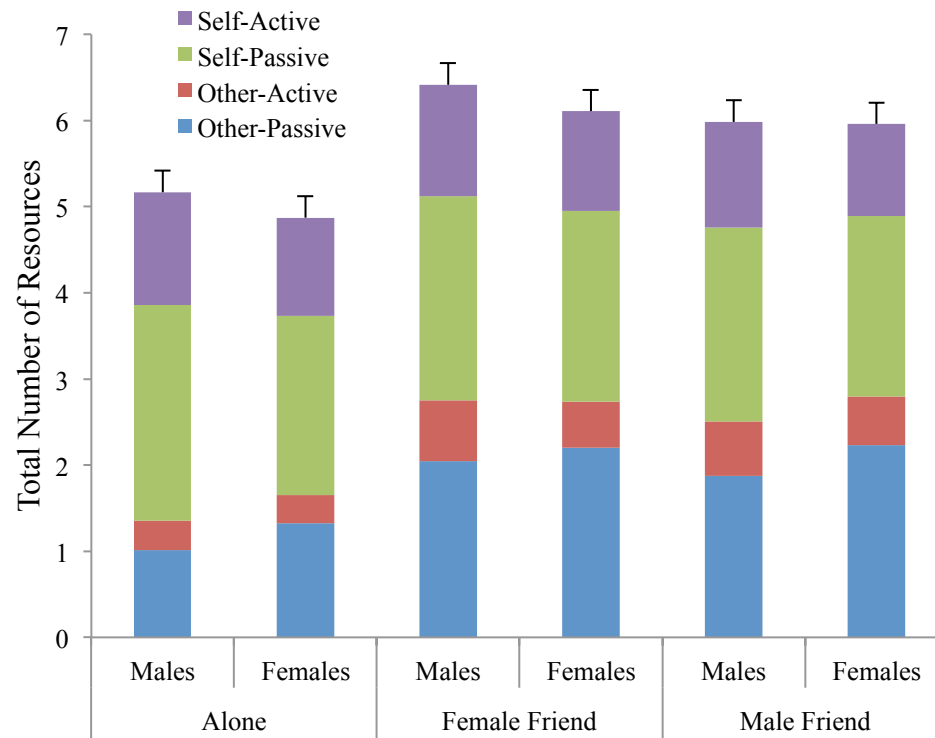


Figure 1.1. Total number of resources subjects perceived to be available by subject gender and condition, collapsed across stressor type.

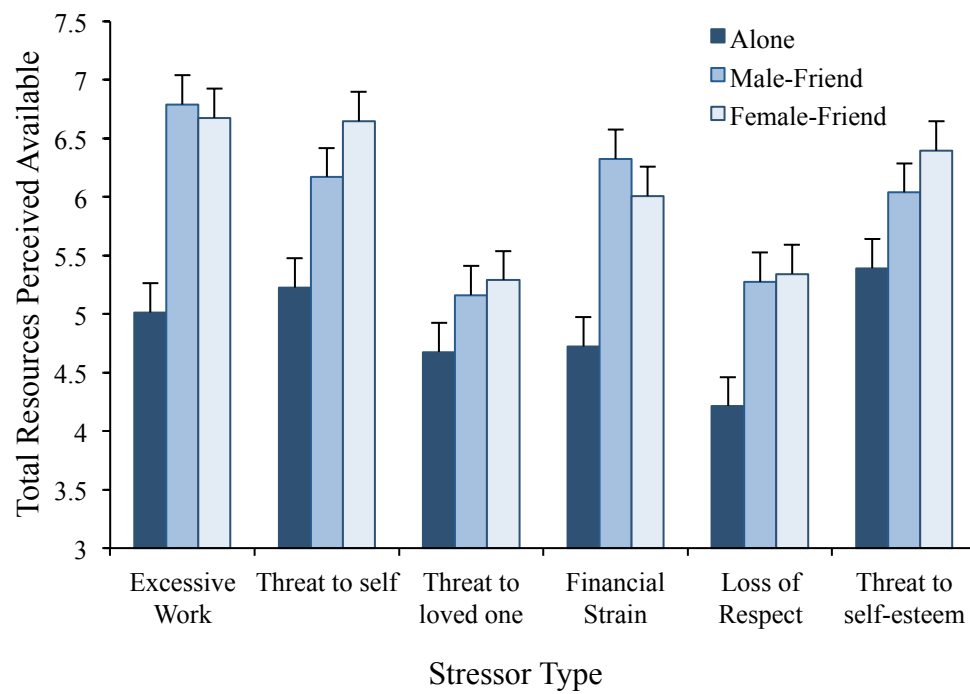


Figure 1.2. Total number of resources perceived to be available by female subjects, varying by stressor type and condition.

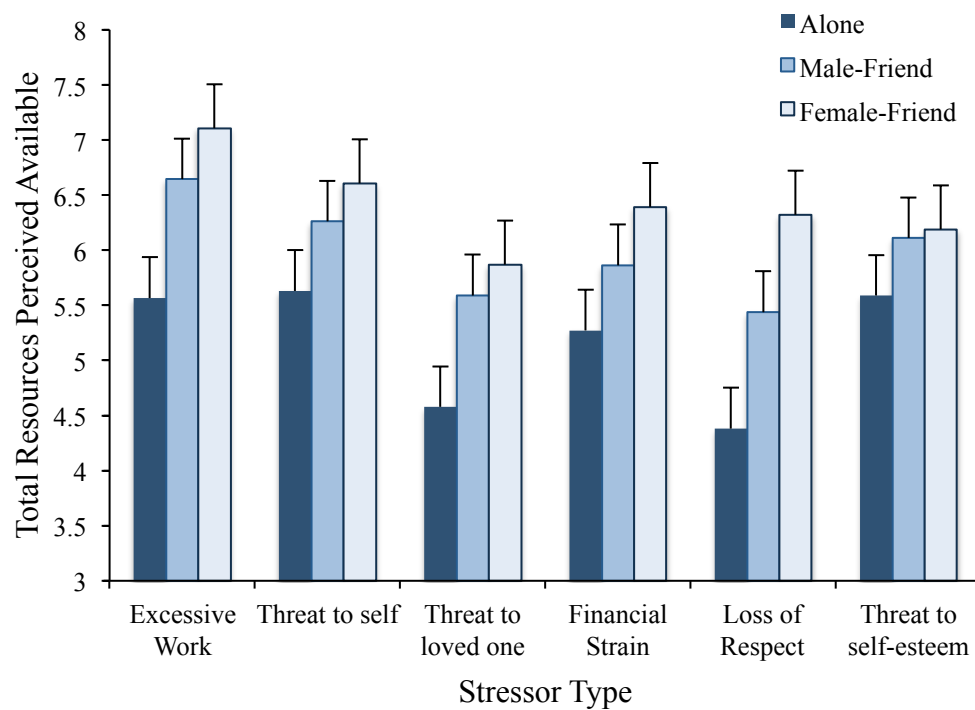


Figure 1.3. Total number of resources perceived to be available by male subjects, varying by stressor type and condition.

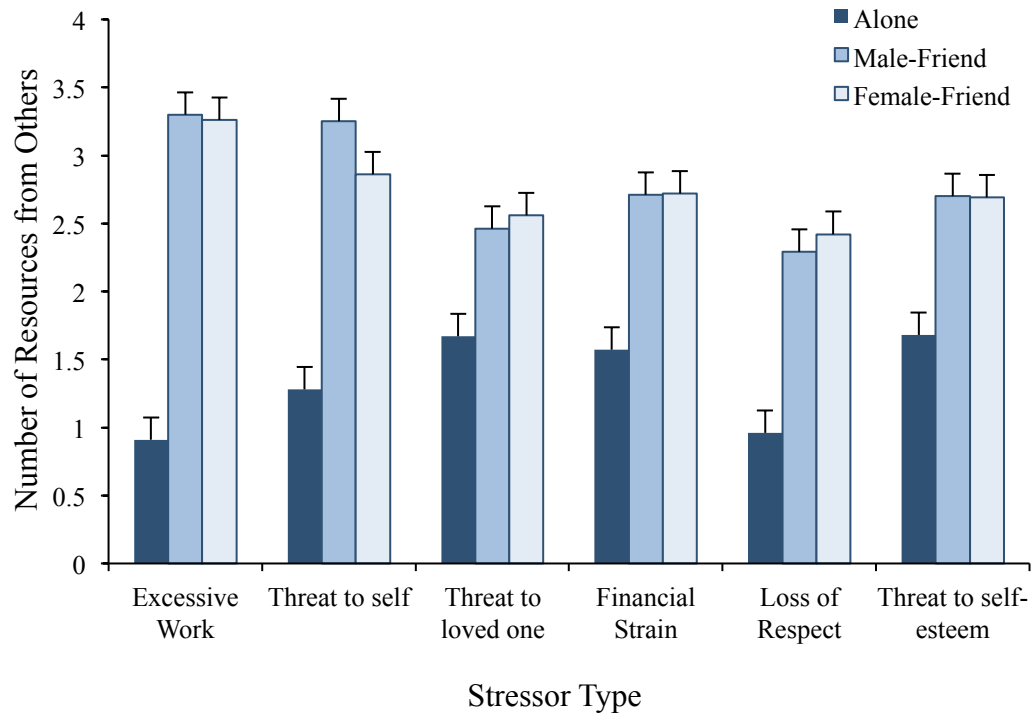


Figure 1.4. Resources from others that female subjects felt would best help them address stressful situations, by stressor type and condition.

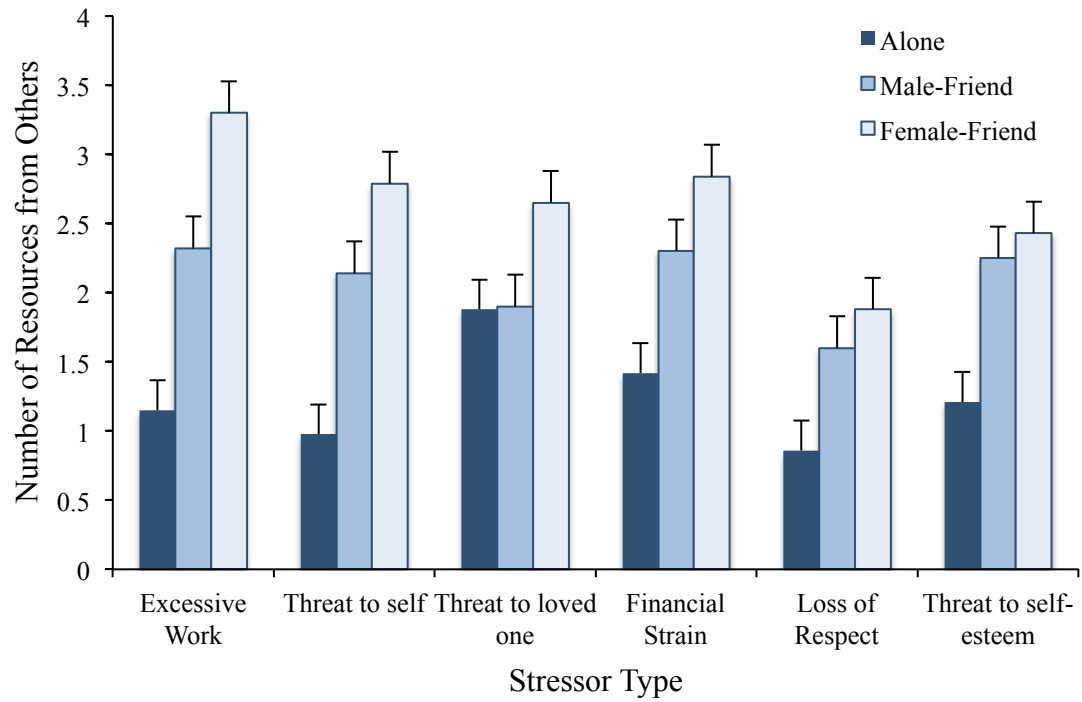


Figure 1.5. Resources from others that male subjects felt would best help them address stressful situations, by stressor type and condition.

Appendix

Resource Checklist for Studies 1a and 1b

Resource:

- your own money and material possessions
- friend's ability to put things into perspective
- your own optimism/faith that things will work out
- friend's ability to work and do basic tasks for you
- your own skills and talents
- your ability to ignore unpleasant situations
- friend's skills and talents
- your own ability to put things into perspective
- friend's ability to stay calm
- friend's sense of humor
- your work ethic
- friend's ability to help you forget about the situation
- your planning and problem-solving abilities
- friend's ability to reassure and support you
- your own sense of humor
- friend's planning and problem-solving abilities
- your ability to stay calm
- friend's money and material possessions

Classification:

- Self, Active
- Other, Passive
- Self, Passive
- Other, Active
- Self, Active
- Self, Passive
- Other, Active
- Self, Passive
- Other, Passive
- Other, Passive
- Self, Active
- Other, Passive
- Self, Passive
- Other, Passive
- Self, Passive
- Other, Active
- Self, Active
- Other, Active

Chapter 2 – Studies 2a and 2b

Introduction

Despite well-documented health benefits of social support (House, Landis, & Umberson, 1988; Uchino, Cacioppo & Kiecolt-Glaser, 1996), men consistently use support less than women (Edwards, 1993; Taylor, 2000). The reasons for this discrepancy in support use, however, are largely unknown. While men use support less than women, they benefit from it just as much. Stress-related mortality is lower in men who face stressors with adequate social support (Rosengren et al., 1993), and, among one large community sample of men, lack of support tied with smoking as the main predictor of coronary heart disease (Orth-Gomer et al., 1993).

Since not receiving support can have such damaging effects, it is unclear why males would use support so much less than women. Studies 1a and 1b suggest that this could be due to the gender makeup of their social circles; men and women found female friends equally useful, but in the case of male friends, male subjects found them less useful than female subjects did. Males, then, may feel that support from females is more valuable, more accessible, or more effective than that from males.

This is consistent with literature showing that men actually report having more close relationships with females than males (Komarovsky, 1974). Men also report receiving more support than women in situations where the support-givers are of the opposite sex, such as a heterosexual spouse or opposite-sex twin (Vanfossen, 1981; Cutrona, 1996; Kendler, Myers, & Prescott, 2005). It seems that when support givers are female men receive at least as much support as women, but because women receive

support from both males and females, and both inside and outside their marriage (Edwards, Nazroo, & Brown, 1998), females end up receiving more support overall.

The question remains, however, how and why this imbalance occurs, and in what situations. It could be, for example, that men are more comfortable requesting support from females than they are from males. Typical socialized gender roles emphasize independence for men, thus asking for help can be seen as weak and ego threatening (Brannon & Davis, 1976; Addis & Mahalik, 2003; Good, Dell, & Mintz, 1989). Asking for help from another male may be especially awkward or embarrassing. Because supporting and nurturing are often seen as characteristics of the typical female role (Barbee et al., 1993), requesting help from a female may be less threatening, or more likely to produce the sought after support. Alternatively, men may be just as unlikely to ask females for help as males, but may receive more help from females because women are more likely to offer support (Belle, 1987). It remains unclear, then, whether men, given the same problem, would ask males and females for help with different frequencies. It could be that males would ask for less help overall, or this could be the case only when the potential helper is male.

Whether or not this would indicate a true gender bias, however, may depend on the type of support being sought. For example, females have been shown to be more empathetic and nurturing, making them the most appropriate source of emotional support. If men selectively turn to females for this type of support it may suggest that their support seeking patterns are driven not by ego threat but rather by seeking expertise. Certain types of support, however, do not necessarily favor one gender of support giver over another. Instrumental support, which involves providing tangible services such as money

or opening a door, does not generally fall into the expertise of one gender or another, nor does informational support, in which one is provided with useful information. Examining support seeking behavior in situations in which support givers have equal ability and expertise would be especially informative, and could speak to whether males' support seeking is driven by the threat of asking or the expertise of the provider.

This also emphasizes the question of the generalizability of males' decreased support seeking. While the question of men seeking support has received a good deal of attention in recent literature, the vast majority of this research has centered on seeking help for significant physiological or psychological dysfunction, or for support during major life events (see Galdas, Cheater, & Marshall, 2005 for a review). While it seems clear that men seek support less in times of crisis, it is unclear whether they are less likely to seek support in general for something as simple as opening a door or asking the time. While there is a good deal of anecdotal data suggesting gender differences in these situations, no controlled laboratory studies have examined whether men really are less likely to ask for help in simple, everyday situations, and whether the gender of potential helpers would influence their decision to ask for help.

Because support is believed to reduce stress, a good deal of research has explored how social support influences cardiovascular reactivity. The reactivity hypothesis states that even small increases in cardiovascular reactivity can build up over time, increasing the risk of cardiovascular morbidity (Krantz & Manuck, 1984), thus reductions in the magnitude or duration of cardiovascular reactivity due to stress could be beneficial. Generally, laboratory studies have found that both men and women benefit from support during acute stressors, showing muted reactivity or faster recovery when support is

present (Glynn, Christenfeld, & Gerin, 1999; Kamarck, Manuck, & Jennings, 1990; Lepore, Allen, & Evans, 1993). However, this literature has exclusively examined the physiological effects of receiving freely given support. None to date has examined how actively seeking support influences cardiovascular reactivity, which is often a necessary step in receiving support.

Examining how asking for help influences physiological reactivity could also help explain gender differences in support use. If support seeking is in fact ego threatening to males, this could be manifest in greater cardiovascular reactivity or slower recovery compared to females. Alternatively, if men do not seek help purely because they feel they do not need it or it would not be helpful, then asking for help should not produce any threat or increase reactivity. While men may benefit from receiving support, it remains to be seen if they experience greater costs of requesting support, and if resulting distress and cardiovascular elevation outweigh the potential benefits.

The purpose of the current study was to examine gender differences in help seeking under stress. We sought to explore whether men's decreased support use was attributable to a disinclination to ask for help when given the same tasks and support options as women, and whether men would continue to show a preference for female helpers even in areas where women do not have expertise. We also sought to determine how asking for help influenced cardiovascular reactivity, and whether men incurred more physiological costs from requesting help than women did. Specifically, we explored a) whether males and females request help with different frequencies when facing identical stressors and identical support options, b) whether the gender of potential helpers influences help request frequency for males or females when potential helpers have equal

abilities, and c) how support seeking under stress influences cardiovascular reactivity and recovery for males and females.

Methods

Overview

Participants were given a difficult task to do without all the necessary information to complete it. A confederate, who was either male or female and had the necessary information, was present, and participants were told they were allowed to ask the confederate for help if necessary. Participants were also given a non-working pen with which to complete the task, while a jar of new pens lay just out of reach. The confederate recorded whether or not participants asked for help with the task or asked for a new pen, and how long it took them to ask. Blood pressure (systolic and diastolic) and heart rate were monitored throughout the baseline, stressor task, and recovery periods.

Participants

Participants were 172 undergraduates (105 female) at a large western university ranging in age from 17 to 26 ($M = 20.4$, $SD = 1.4$). Participants were primarily Asian (62.3%), Caucasian (22.1%), and Latino (9.3%), the rest being Black (1.7%) or other/declined (4.6%). Participants received course credit in exchange for participation.

Measures

Cardiovascular reactivity was measured throughout the experiment using an Ohmeda Finapres 2300 BP monitor (TNO Biomedical Instrumentation, Belgium). This is a noninvasive instrument that takes beat-to-beat readings through an inflatable cuff worn on the middle finger of the non-dominant hand.

Help-seeking behavior was measured by recording whether or not the participant asked for help (yes/no) for either type of help (instrumental or informational), and the latency of the request in seconds from the time the experimenter left the room.

Procedure and Manipulation

Participants sat for five minutes while baseline cardiovascular readings were taken, after which they completed two filler cognitive tasks (a set of analogies and a face recognition task). During the face recognition task, a confederate was brought into the room, posing as a subject who had just finished the same study and was waiting to be debriefed. Prior to the participant's arrival, either a male or female confederate was randomly assigned to interact with them during the study.

Following the face recognition task, the experimenter re-entered the room in a rushed, flustered manner and told the confederate that the study was running way behind schedule and he/she would need to wait a few more minutes before being debriefed. The experimenter then handed the participant 20 note cards, and told them that in preparation for their next task they would need to write down the names of 20 animals that begin with the letter 'c' – one on each card. The experimenter apologized that their list of animal names couldn't be found, and told the participant that he/she would have to come up with them on their own. Then, pointing to the confederate, the experimenter told them "(he/she) just did the same thing, so I guess if you need help you can ask (him/her)." The participant was finally told that it was essential that they finish the task, or else the entire experiment would need to be started over again from the beginning.

The experimenter then gave the participant a non-working pen, and quickly left the room. A jar of pens sat on a nearby table just out of reach for the participant, whose

movement was restricted by the finger cuff. The finger cuff was attached to a computer by a short cord, making it extremely difficult for the participant to stand and reach very far without moving the computer. Participants were also instructed to move as little as possible and not lift their hand off the table while the finapres was running. The confederate sat at a different table, where a stopwatch in view of the confederate was continuously running. Confederates noted the time on the stopwatch when they first sat down and wrote it in the notebook they were supposedly using to study for a class. The confederate recorded a) whether or not they were asked to hand the subject a pen, b) whether or not they were asked to help the subject with the task, c) the time at which participants asked for a pen, and d) the time at which participants asked for help with the task. Confederates were instructed to passively look over some notes while they waited and to not initiate contact with the participant.

For this experiment, handing the subject a pen can be regarded as instrumental support, as it provided a tangible service, while help with the task itself was regarded as informational support. The experimenter's instructions were designed to emphasize that the participant was supposed to have additional information (a list of animals) to complete the task, and that the confederate had had greater access to that information. The task was not presented as a test of the subject's skills, thus asking for help would not be equated with admitting they were less skilled than the confederate. Rather, the confederate had information that the subject needed in order to successfully complete the task in a timely manner, and male and female confederates had had equal access to that information. This minimized the potential ego threat of asking for help. The suggestion that the experiment would need to be started over again if the task was not completed was

meant to induce stress and motivate the subject to perform well. This increased the possible costs of not asking for help, and made the possible benefits more valuable.

Participants were given five minutes to complete the animal naming task, after which the experimenter entered the room and told the confederate that he/she could now be debriefed. The note cards were collected, the confederate left the room, and the participant sat alone for five more minutes. After this rest period, the experimenter once again entered the room, explained that the experiment would not have to be repeated, and gave the subject forms to fill out. The subject was then debriefed and excused.

Stressfulness of Task

To check that the stressor task was in fact stressful, the final questionnaire also asked participants if they felt any part of the experiment was particularly stressful. They were given space to write a free response.

Data Reduction and Analysis

The cardiovascular parameters of interest for the current study were systolic blood pressure (SBP), diastolic blood pressure (DBP), and heart rate (HR). For each of these, beat-to-beat recordings were averaged for each minute of the experiment. Averages were also computed for each period of the experiment (baseline, filler tasks, stressor task, recovery, questionnaires). Change scores were computed by subtracting the average for each period from the average baseline reading. The periods of greatest interest were the stressor task and recovery periods.

Results

Stressfulness of the Task

Coding free responses from the manipulation check, 72.5% of subjects specifically mentioned the animal naming task as being particularly stressful. This percentage is relatively high given that this was a free response answer and not a forced choice, so participants had the option of writing nothing. None of the other tasks were claimed to be more stressful than the animal naming task. The task therefore seems to have been successful in inducing stress.

Total Requests for Support

An ANOVA was used to assess whether the total number of requests for support made by participants (ranging from 0 to 2) differed by participant gender. The test showed a main effect of gender, with males being significantly less likely to ask for help overall, $F(1, 151) = 5.57, p = .02$.

There was no main effect of confederate gender on total requests for help, $F(1, 151) = 0.71, p = 0.4$. There was, however, a marginal interaction of participant gender and confederate gender, $F(1, 151) = 3.53, p = .059$. As shown in Figure 2.1, males and females requested help equally from female confederates, while males were less likely to request any type of help from male confederates.

Requests for Instrumental Support

In order to assess which factors influenced whether or not participants asked for a pen, subject gender and confederate gender were entered into a binary logistic regression with requesting help (yes/no) as the dependent variable. T-tests and ANOVAs were used to determine whether the independent variables influenced request latency. In cases when participants did not ask the confederate to hand them a pen, they most often balanced on

one foot to try to reach the jar, moved the computer equipment, or scratched their answers into the paper with the broken pen.

Participant Gender. The test showed a main effect of participant gender on likeliness to ask for a pen, $\chi^2(1, N = 159) = 4.36, p = .037$. Inspection of the data showed that females asked for help in 87.5% of cases, while males asked in only 74.5% of cases.

A t-test was used to assess if there was a difference in the amount of time male and female subjects who did ask for a pen waited to ask for it. Again there was a significant effect of gender, with males who asked for a pen waiting significantly longer ($M = 18.66$ seconds, $SD = 23.85$) to ask than females ($M = 9.86$ seconds, $SD = 7.48$), $t(129) = 3.13, p = .002$.

Confederate Gender. The logistic regression showed no main effect of confederate gender on requests for instrumental support, $\chi^2(1, N = 159) = 0.52, p = 0.47$, suggesting that, overall, male and female confederates were equally likely to be asked for help.

A t-test was performed to explore whether help request latency was influenced by the gender of the confederate. This test was also not significant, showing that, overall, subjects waited an equal number of seconds to ask male and female confederates to hand them a pen.

Participant Gender x Confederate Gender. The logistic regression showed no significant interaction of subject and confederate gender on participants' likeliness to ask for a pen, $\chi^2(1, N = 159) = 0.26, p = 0.61$.

Inspection of the data showed that there appeared to be gender differences in frequency of asking for help with male confederates, but not female confederates. It is

possible that the overall interaction was not significant because male and female subjects differed in asking frequency for one confederate gender but not the other. To test this, we performed an exploratory analysis of help seeking behavior for male and female subjects separately for female confederates and then for male confederates.

As expected, for female confederates there was no effect of subject gender on whether or not they asked for support, $\chi^2(1, N = 78) = .002, p = 0.96$. As Figure 2.2 shows, male and female subjects' help-seeking behavior was essentially identical when the potential helper was female. Females asked for a pen in 84.8% of cases, while male participants asked in 84.4% of cases. For male confederates, however, there was a significant effect of participant gender on whether or not they asked for support, $\chi^2(1, N = 81) = 7.84, p = .005$. As shown in Figure 2.2, male subjects were much less likely than female subjects to ask for help when the potential helper was male. Females asked for a pen in 90% of cases, quite similar to when they were with a female confederate, yet males asked only 64.5% of the time when with a male confederate.

An ANOVA was used to test for an interaction of subject gender and confederate gender on latency of support requests. The interaction was not significant. This test, however, is relatively weak, as those who did not request help were excluded.

Requests for Informational Support

Requests for informational support were measured by whether or not participants asked confederates for help with the animal-naming task. This task proved to be challenging enough to require asking for help; of those who did not ask for help ($n = 63$), not a single person was able to finish the task in the allotted five minutes, and 52% got less than half of the animals. The confederate's information, then, was in fact necessary

in order to succeed. Those who asked for help with the task ($n = 103$) wrote down significantly more animals ($M = 15.93$, $SD = 3.80$) than those who did not ask for help ($M = 9.30$, $SD = 3.57$), $t(164) = 11.16$, $p < .001$. Approximately 28% of those who asked for help finished the task, and only 4% got less than half of the animals.

Participant Gender. First a t-test was performed to assess whether performance on the task without help differed by gender. Of those who did not ask for help with the task, there was no difference between males and females in the number of animals they wrote down, $t(61) = 1.26$, $p = 0.23$. It was not the case, then, that one gender was more capable of completing the task on their own and therefore did not need help.

A binary logistic regression was again used to determine what factors influenced whether or not participants requested help on the task. While females were more likely to ask for help than male participants, the regression showed this differences was not significant, $\chi^2(1, N = 168) = 2.1$, $p = 0.15$.

A t-test was performed to investigate whether participant gender influenced support request latency among subjects who did ask for help with the animal naming task. There was no significant difference between genders in help request latency, $t(102) = 0.47$, $p = 0.64$.

Confederate Gender. The regression also showed no main effect of confederate gender on requests for help, The test was not significant, suggesting that, overall, participants were equally likely to request help from male confederates and female confederates.

Another t-test was used to test whether there was a difference in the amount of time participants waited to ask for help based on the gender of the person they were asking. There was no significant difference based on confederate gender.

Participant Gender x Confederate Gender. The logistic regression showed that the interaction of subject and confederate gender was not significant, $\chi^2(1, N = 168) = 1.87, p = 0.17$.

Inspection of the data again suggested that gender differences in asking for support may have only occurred with male confederates, which could be why the overall interaction of subject and confederate gender was not significant. Exploratory analyses were again performed using separate chi-square tests for female confederates and male confederates to test whether men and women's help seeking differed for one gender of confederate but not another. As before, when the confederate was female, there was no significant difference between male and female participants in their rate of help requests. As seen in Figure 2.3, male and female participants requested help from female confederates with similar frequency (63.9% and 67.3%, respectively). However, when the confederate was male, male and female participants differed significantly in their help requests, $\chi^2(1, N = 83) = 4.22, p = .04$. Females requested help from male confederates in 64.8% of cases, quite similar to their behavior with female confederates. Males, however, requested help from male confederates in only 41.4% of cases, far less than they did with female confederates.

Finally, an ANOVA was performed with participant gender and confederate gender as the fixed factors in order to determine if these variables had an interactive

effect on support request latency. The data show no significant interaction of subject and confederate gender on the time subjects waited to ask for help, $F(1, 100) = .004, p = 0.95$.

Cardiovascular Reactivity

Gender. A repeated measures ANOVA was performed to assess whether men and women differed in cardiovascular reactivity during the baseline, stressor, and recovery periods. The analysis showed a significant interaction of gender and time on systolic blood pressure (SBP), $F(2, 140) = 8.95, p < .001$. As shown in Figure 2.4, this effect was mainly driven by females showing greater elevation in blood pressure during the stressor task compared to males. There was no significant difference between men and women at baseline, but females showed a significantly greater increase during the stressor task, $F(1, 70) = 16.73, p < .001$. Blood pressure remained essentially the same for both genders from the stressor task to the recovery period, during which females also showed a significantly greater change from baseline, $F(1, 70) = 7.08, p = .01$. The analysis for diastolic blood pressure (DBP) showed no interaction of gender and time, and inspection of the data showed that DBP changed almost identically for men and women throughout the experiment. This was also the case for heart rate (HR).

Help Seeking and CVR. To assess whether those who did and did not ask for help differed in cardiovascular reactivity, a t-test was performed comparing change in SBP from baseline in those who did and did not ask for help during the stressor task. Those who asked for help showed significantly greater increase in SBP from baseline than those who did not, $t(67) = 2.9, p = .005$. It is unclear, however, whether this elevation in SBP is the impetus for asking for help, or the product of it. In order to explore this, minute-by-minute blood pressure of participants who requested help was

compared based on when during the stressor period they requested support. If asking for help produced the elevation, one would expect to see an increase in reactivity immediately prior to asking. On the other hand, if participants asked for help because they were especially stressed, they would likely show greater elevation from the beginning of the task. The data showed that, for those who asked for help, blood pressure was no different immediately before or after the help request, and those who asked for help early during the stressor were no different from those who asked for help at the end. It is possible that those who asked for help showed higher blood pressure because they were preparing to and recovering from asking for help, or, more likely, that those who asked for help were the subjects who felt more stressed.

Help Seeking and Gender. An ANOVA was used to assess whether changes in SBP related to help seeking differed by gender. There was no interaction of gender and help requests on SBP change from baseline ($p = 0.99$). The SBP increase associated with requesting help, then, appears to have been the same for males and females. This was also true for DBP and HR.

Subject Gender and Confederate Gender. An analysis was performed to determine whether asking for help was more upsetting or calming for men and women if they requested it from a male or female confederate. An ANOVA was performed only for subjects who requested help, with confederate and subject gender entered as the independent variables and cardiovascular parameters as the dependent variables. There was no interaction of subject and confederate gender on SBP, DBP, or HR.

Help Seeking and Recovery. The influence of asking for help on CVR can also be seen in how well participants recovered from the stressor task. If participants who

asked for help had higher SBP because they were more stressed, then they should show recovery after the stressor task is over, particularly because they received support that helped them succeed. If this elevation was due to the stress of asking for help, however, then those subjects might show continued elevation after the stressor task is over. In order to test this, a repeated measures ANOVA was performed comparing SBP during the stressor and recovery in those who did and did not request help. The data revealed no interaction of help requests and time on SBP, DBP, or HR.

Help Seeking and Recovery by Gender. In order to test whether recovery differed in men and women who did or did not request help, another repeated measures ANOVA was performed with subject gender added in as an independent variable. There was a marginal interaction of gender and help seeking on recovery, $F(1, 65) = 2.90, p = .094$. As shown in Figure 2.5, females who requested help showed recovery afterwards, while blood pressure in females who did not request help slightly increased. For males, there was little change for those who requested help or did not request help. There was no effect for DBP or HR.

Help Seeking and Recovery by Confederate and Subject Gender. A repeated measures ANOVA was also performed only with subjects who requested help, with subject and confederate gender as the independent variables. There was no significant interaction for any of the cardiovascular measures, suggesting that men and women recover similarly when requesting help from males or females.

Discussion

Consistent with previous literature, these data show that males and females are very different in their help seeking behavior. However, data here suggest that this may

only be true when support sources are male. For both instrumental support and informational support, males were significantly less likely than females to ask male confederates for help. When the potential helpers were female confederates, however, male participants' help seeking behavior was identical to that of female participants. Even for something as simple as being handed a pen, it appears that men tailor their help seeking based on gender of potential helpers. It appears, then, that men receive more support from females not only because women are more likely to offer it, but because men are more likely to ask women for help.

In the animal naming task, males and females performed equally poorly when not receiving help, showing that males and females were equally in need of assistance. It is possible that males faced the task as more of a challenge than a threat, and believed they could complete it if they tried hard enough. Again, however, this is unlikely, as the difference in support seeking on this task was only seen when with a male confederate. It seems likely that in this case differences in help seeking were a result of willingness to request help, and not a difference in perceived need for help.

The fact that males waited twice as long as females to ask someone to hand them a pen does suggest an overall disinclination to ask for help, regardless of the gender of the potential helper. However, this was not seen in the animal naming task. Again, if differences in support seeking were based on differences in self-efficacy, and that males wanted to try to conquer the task before resorting to help, one would expect to see males asking after significantly more time had passed. Male and female participants were equally good at the task and asked for help after an equal number of seconds, suggesting that males and females got to a similar point where they needed help, and then decided

whether or not to ask for it. Again, for males, the gender of the helper appears to be key in this decision.

These data closely parallel data from Studies 1 and 2 in the previous chapter. The previous studies show that males feel that their female friends provide more helpful resources than their male friends in a variety of situations and types of stressors. In fact, when they were with a female friend their resource appraisal closely mirrored that of female participants. It was only when they imagined being with a male friend that their resource appraisals differed from females. The data in the current study suggest that these resource appraisals may translate quite directly into support seeking behavior, with participants more likely to ask for help in situations where they perceive a greater chance of obtaining those resources. In this case it is unlikely that women were seen as more capable of handing the subject a pen than men were, but were perhaps seen as more willing to do so.

An important difference in the design of the two studies, however, is that subjects in the first study were imagining being with close friends, while those in the current study were forced to ask for help from strangers. It is uncertain whether the perceived costs and benefits of asking a stranger for help would be the same as those perceived in asking a friend. It could be that it is less threatening to ask one's friends for help since they will be less likely to think less of you for doing so, or would be more likely to agree to help you. Alternatively, if males do not ask for help because of ego threat, it could be less threatening to ask a stranger whom they would be unlikely to see again. More research is needed to determine whether the patterns seen in this data would change when looking at help seeking behavior among friends and acquaintances.

Cardiovascular data revealed that females exhibited significantly greater reactivity during the stressor task, suggesting they may have found it more stressful. Again this is consistent with Studies 1a and 1b, in which females found the same situations significantly more stressful than males. This difference in reactivity could suggest that, while their actual need of support is equal to females', males' perceived need of support is lower because they do not find situations equally as threatening. Those who asked for help showed significantly greater systolic blood pressure than those who didn't, and the data suggested this was due to them finding the task more stressful. Additionally, asking for help was associated with equal elevations in blood pressure for men and women. This suggests that men and women ask for help when they reach a similar stress level, but men are simply less likely to get there. This is consistent with males perceiving less risk than females in a variety of threatening situations (Gustafson, 1998) and reporting greater optimism about recovery and greater sense of control over their health given the same disease diagnosis as women (Grace et al., 2005). The fact that males selectively asked females for help, however, suggests that perceived threat is not the only factor determining whether or not someone will ask for support. For males, at least, it seems that the attributes of the potential helper also influence their decision.

Contrary to expectations, the data showed that males exhibited equal blood pressure elevations and equal recovery when asking male and female confederates for help. In this case it appeared that it was no less threatening to ask females for help, but it appeared to be more worth their while, since males were more likely to ask females for assistance with the task. It is unclear exactly how to interpret this data, however, as this was not a random sample of males but rather those who chose to ask for help. It could be

that those who did not ask for help were the ones who found help seeking too threatening, while those who asked for help did so because they perceived few costs in doing so. If all subjects had been forced to request help, blood pressure when requesting help from a male or female may have looked very different. As the sample asking for help was self-selected, they cannot speak to how men in general would react to asking males and females for help.

While requesting help was associated with equal elevations in SBP for men and women, recovering from support seeking differed between men and women, though only to a marginal degree. Females who requested help showed recovery afterwards, while those who did not request help actually showed an increase in blood pressure afterwards. It could be that their performance on the task influenced their recovery, since those who did not ask for help performed significantly worse. For males, however, a different pattern emerged; those who requested help remained elevated throughout the recovery period. This could be because they were not as elevated to begin with and so had less room for recovery. It could also be that the benefits of receiving help were countered by the ego costs of asking for it. However, these again are a self-selected rather than randomly selected group, thus it remains unclear exactly which cognitive processes influenced this difference, and how representative these subjects are of men and women overall.

While these data show a consistent unwillingness of males to ask other males for help, it remains unclear exactly which parts of support seeking deter them. Receiving support actually entails several distinct processes; asking for help, accepting help, and actually receiving help. It could be, for example, that men would be perfectly willing to

accept offered help from other men, but simply do not want to ask for it. Alternatively, men could be less willing to ask for or accept offered help, but may still benefit from help when they receive it. Or, it could be that support from other males really is less effective and harder to obtain. In that case, males' appraisals of the availability of helpful resources would be an accurate estimate, rather than a reflection of them not wanting to ask for them. A better understanding of the perceived costs and benefits of help seeking would help shed light on these patterns, and speak to whether males do not ask other males for help because the process itself incurs costs or because they believe the potential benefits are less.

Study 2b

Introduction

A follow-up study was conducted to better understand the mechanisms driving these help seeking patterns. Men appear disinclined to ask other males for help, but it is not clear why. This could be due to costs of the help-seeking process, such as awkwardness or embarrassment or relinquishing perceived control (Addis & Mahalik, 2003). It could also be based on potential benefits, such as how likely they believe they would be to get the help they asked for. In Study 1a, men claimed they would be no less likely to ask a male friend for help than a female friend, but Study 2a showed that, for instrumental and informational help, males were less likely to request help from males than from females. This data, however, is not able to determine whether men's disinclination to ask other men for help is due to higher perceived costs, such as embarrassment or lack of control, or lower perceived benefits, such as other males being less willing or less able to provide the needed assistance. This follow-up study was

conducted to determine specific costs and benefits men and women associate with asking a stranger for help.

Methods

Overview

Participants were given a survey describing a situation in which one might ask for help. They were then asked to indicate whom they would likely solicit help from, and how requesting help would likely influence their thoughts and emotions.

Participants.

Participants were 126 undergraduates (100 female) at a large western university who participated in exchange for course credit. They were mostly Asian (61.1%), Caucasian (18.3%), and Latino (15.1%), the remaining few being Black (2.4%) or “other” (3.2%). Age ranged from 18 to 40 ($M = 20.4$, $SD = 2.51$).

Measures.

Participants were given a survey that described a situation similar to the stressor task in Study 2a. They were told they were participating in an experiment and did not have all the necessary information to complete an important task, but another subject sitting in the room had the information. Participants were asked to rate on a series of Likert scales a) whether they believed it was allowed to ask for help, b) whether it was reasonable to ask for help, c) how they would judge a female who asked for help in that situation, and d) how they would judge a male who asked for help in that situation. They were also asked to choose whether they would likely request help from a male or female in that situation.

Participants were then given a series of questions about their estimations of the costs and benefits of requesting help. They rated, on 7-point Likert scales, how likely they felt someone would be give them help if they asked for it, how embarrassing it would be to ask for help, how awkward it would be to ask for help, and how asking for help would influence their sense of control. For each of these questions, participants gave ratings for four different potential supporters: a female friend, a male friend, a female stranger, and a male stranger.

Results

Help Seeking

Participants generally felt that it was allowed to ask for help in the given situation and that it would be reasonable to do so. Males and females did not differ in these beliefs. Male and female participants also did not differ in their estimations of how their opinion of someone would change if they requested help; for both males and females asking for help, participants indicated that their opinion of them would be relatively unchanged based on their help-seeking.

A chi-square analysis was used to determine if male and female subjects differed in whom they would ask for help. There was no significant effect of participant gender on selecting a male or female helper. For both male and female subjects, the majority (80.1% of males, 72% of females) suggested they would be more likely to ask a female subject for help than a male subject for help.

Cost and Benefit Analyses

A repeated measures ANOVA was performed on participants' estimates of how likely they felt the four different support sources would be to give them the help that they

requested. This was done in order to determine whether participants felt one source would be more willing than another, and to determine whether male and female participants differed in these beliefs.

There was a significant effect of type of support giver on how likely participants felt they would be to get the help they requested, $F(3, 372) = 99.43, p < .001$. Not surprisingly, males and females both felt that friends would be more likely to provide requested assistance than strangers.

The main question, however, was whether the gender of the helper influenced participants' ratings of their estimated helpfulness. In order to explore how the gender of the helper influenced participants' perceptions of how likely the helper would be to provide requested assistance, we compared ratings of male and female friends and then separately compared male and female strangers. Examining only help from friends, there was a significant interaction of friend gender and participant gender, with women feeling they were more likely to get help from male friends and men feeling they were more likely to get help from female friends, $F(1, 124) = 5.81, p = .017$ (Figure 2.6). Examining only strangers, men and women felt that female strangers would be equally likely to help them, but men again felt that male stranger would be less likely to provide assistance than females did, $F(1, 124) = 5.97, p = .016$. Overall, collapsed across friends and strangers, men and women felt that females would be equally likely to give them the help they asked for, $F(1, 124) = 0.23, p = 0.64$. For male helpers, however, males felt they would be significantly less likely to give the participant the help they asked for, $F(1, 124) = 4.50, p = .035$, with males believing they would be less likely to get help (Figure 2.7).

For awkwardness, embarrassment, and control, there was a significant effect of helper type, with participants generally feeling it would be more embarrassing, more awkward, and diminish perceived control more to ask a stranger for help rather than a friend (for all $p < .001$). However, for all three questions, there was no effect of helper gender or participant gender, nor was there an interaction of helper and participant gender. Men and women indicated that it would be equally awkward, embarrassing, or control diminishing to request help from a male friend as a female friend, or a male stranger as a female stranger.

Discussion

These data suggest that gender differences in support requests may be due more to perceived benefits than perceived costs. While the costs of requesting help from a stranger appeared higher than requesting help from a friend, men and women did not differ in their estimations of these costs, nor did the costs differ with the gender of the support giver. Men and women also suggested that their opinions of people who asked for help would remain relatively unchanged, regardless of the gender of the help seeker.

The main differences appeared in their estimations of how likely they would be to get the help they requested – that is, in the potential benefits they would garner from asking for help. Both men and women felt they would be more likely to get help from a friend than a stranger. For both types of helper, however, men felt they would be less likely to get help from a male than a female, while females believed men would be more likely to help them. This difference suggests that men avoid asking other men for help not because they believe that doing so would incur ego costs, but because they believed they have a smaller chance of receiving the benefits they are seeking.

This emphasizes the question of whether this is an estimation of willingness or skill on the part of the helper. Men may believe that male and female helpers are equally capable of providing help, but that females would be more willing to respond to requests. Alternatively, men may feel that males and females would be equally likely to agree to help them, but that females would be more capable or provide better support. If the former were true, one would expect men's bias towards female helpers to disappear if the help was freely offered rather than needing to be requested. If the latter were true, one might see men still favoring females even when males offer help.

These data do not support the theory that men use support less because of ego threat. Clearly, however, there is more guiding the process of help seeking than the data suggest. Men use support less in general, not just from other men, yet, collapsing across supporter types, men were no less likely overall to believe people would give them the help they were seeking. There may be costs to help seeking beyond awkwardness, embarrassment, or losing perceived control, or these things may be affected more than men are aware of when imagining a hypothetical situation. These data do suggest, however, that males shy away from seeking help from other men at least partially because they feel they have a smaller chance of getting the help they need from them.

Chapter 2, in part, is being prepared for submission for publication of the material. Larsen, B.; Christenfeld, N. The dissertation author was the primary investigator and author of the material.

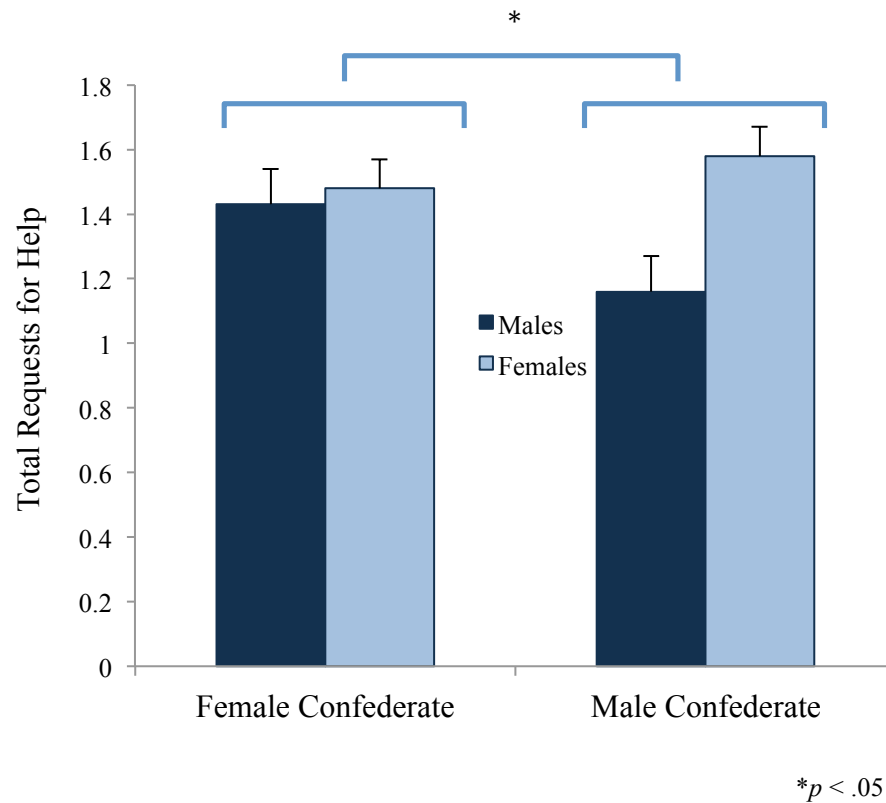


Figure 2.1. Total number of requests for help made by male and female participants to male and female confederates.

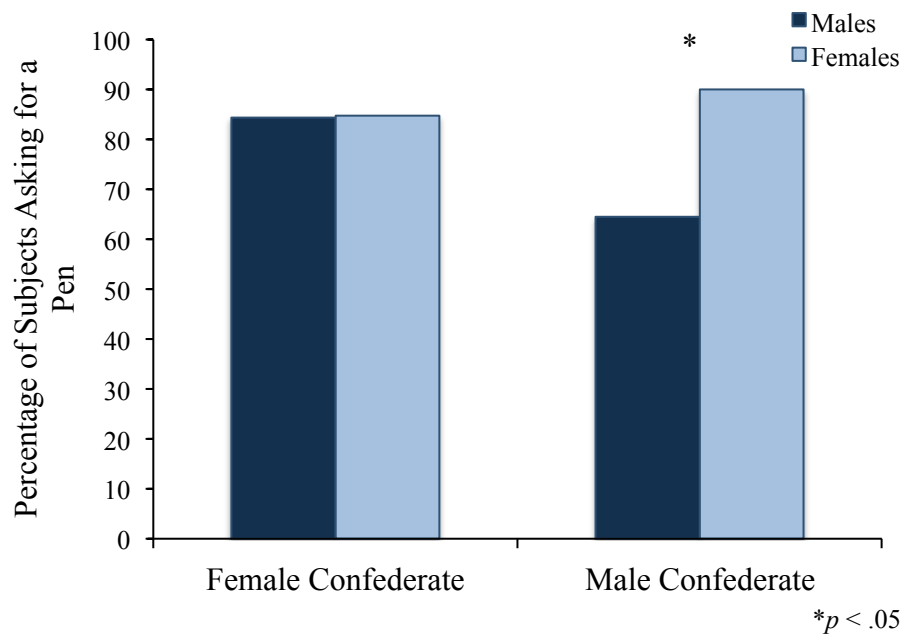


Figure 2.2. Percentage of male and female participants asking for instrumental support from male and female confederates.

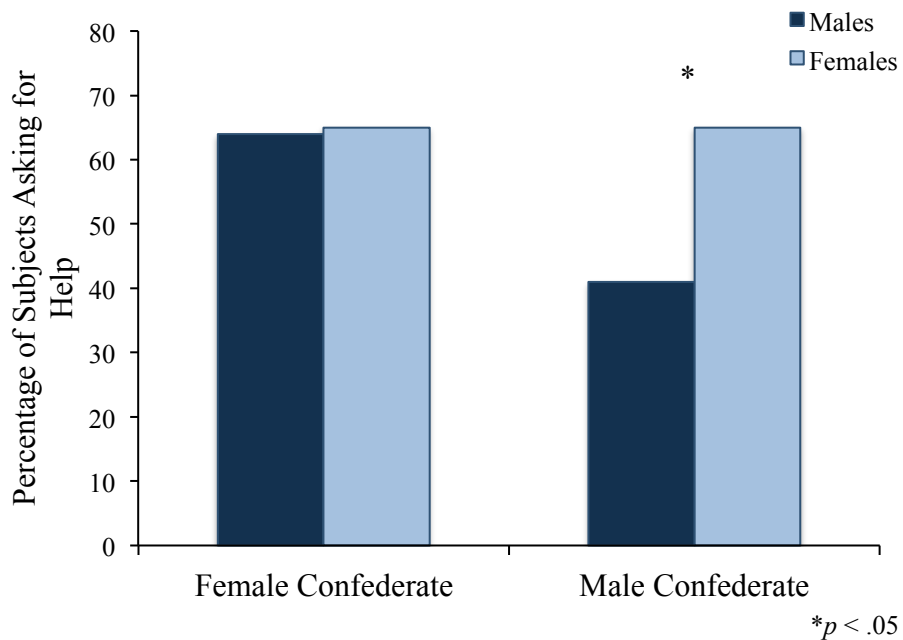


Figure 2.3. Percentage of male and female participants who requested informational support from male and female confederates.

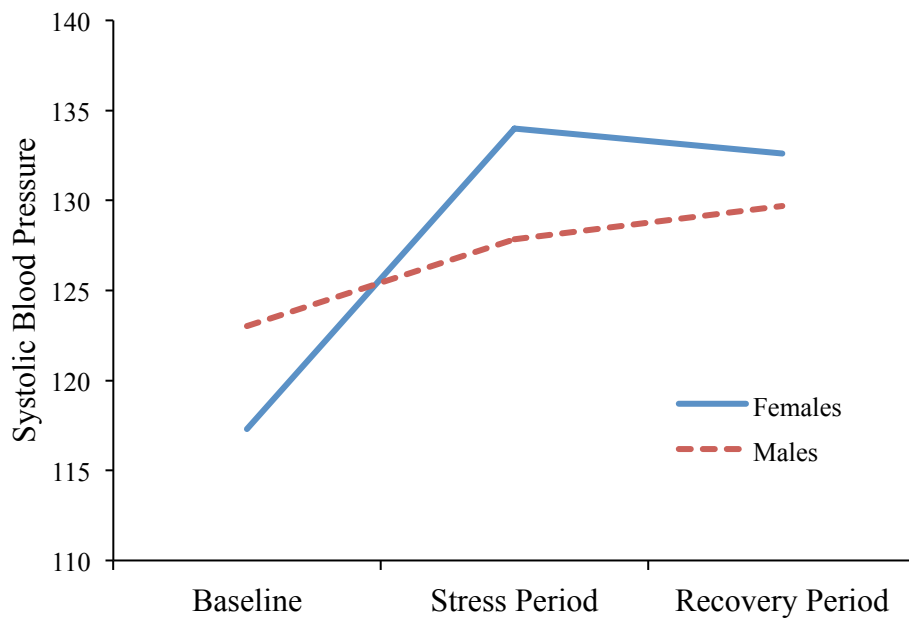


Figure 2.4. Systolic blood pressure in male and female subjects across the study periods.

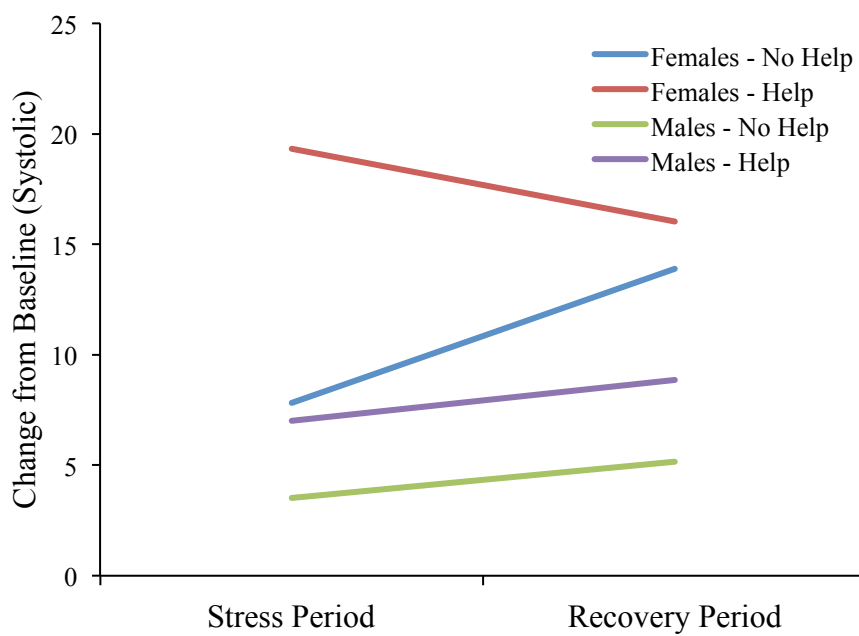


Figure 2.5. Systolic blood pressure during the stress and recovery periods for male and female subjects who did or did not ask for help.

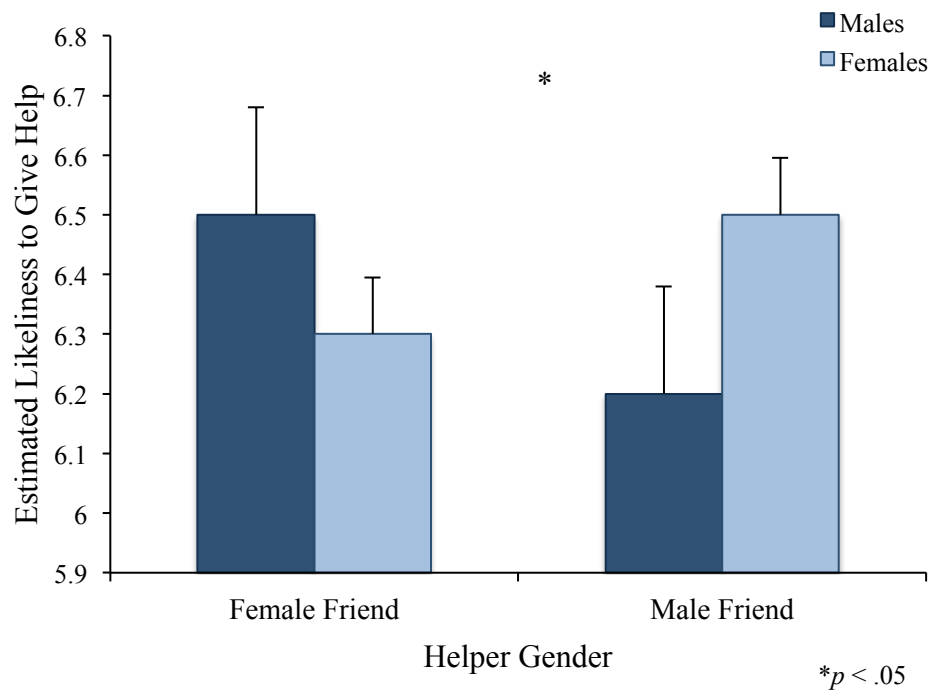


Figure 2.6. Estimations of how likely a male or female friend would be to give male and female participants help if they asked for it, ranging from 1 (*not at all likely*) to 7 (*extremely likely*).

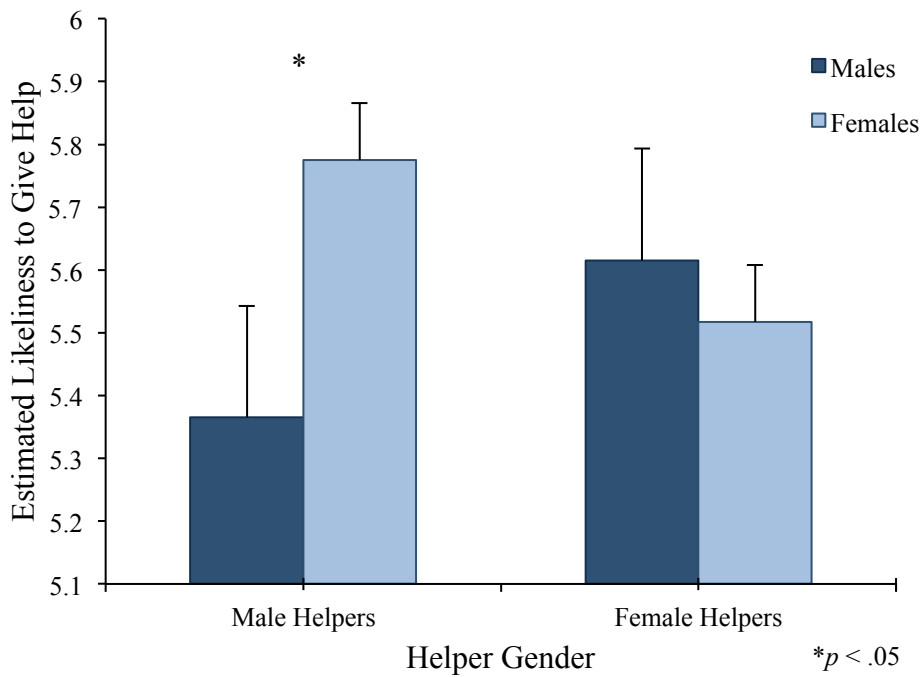


Figure 2.7. Male and female participants' estimations of how likely a potential helper would be to give them help if they asked for it, ranging from 1 (*not at all likely*) to 7 (*extremely likely*).

Chapter 3 – Study 3

Introduction

While research repeatedly shows that men use social support less than women do, there appear to be situations in which men will use support; namely, when the support givers are women. Research shows that men actually report receiving more support from their spouses than women do (Vanfossen, 1981; Cutrona, 1996), and males are more likely to report having close relationships with females than with males (Komarovsky, 1974). In Study 2a, data revealed that males were less likely overall to request help than females, but this was driven by males not asking other males for help. When potential helpers were women, male subjects were just as likely to request help as female subjects. It seems, then, that the reduced use of social support in men is partially driven by a disinclination to use support specifically from other men.

Data from Study 2b suggests that this may be due to a difference in perceived benefits. Male subjects indicated that for both friends and strangers they believed females would be more likely to give them help if they asked for it. This may indicate that the preference for female helpers has little to do with ego costs, as has previously been suggested (Addis & Mahalik, 2003), and more to do with the potential success of their request. This perception may be accurate; while women use support more than men, they are also more likely to give support than men are (Veroff, Kulka, & Douvan, 1981; Belle, 1987; Copeland & Hess, 1995), and women even show greater physiological reactivity to the misfortunes of others than males do (Eisenberg et al., 1991). This may mean that women would be less likely to decline a request for help than men are.

Alternatively, the difference could be in perceptions of how capable the supporter is rather than their willingness. Male participants felt that males would be less likely to give them the help they asked for, which does not distinguish between those who would try to help but fail and those who would not try at all. It could be that men and women are seen as equally willing to help, but that women are seen as more capable. Again, this may be true when examining emotional support. Females are consistently found to be more empathetic than men (Trobst, Collins, & Embree, 1994; Eisenberg & Lennon, 1983), which may mean that emotional help from a female could be more effective, not simply more available.

It is uncertain if this would also apply to other types of support. If men believe that other men could provide effective support but are unwilling to, then males' preference for female helpers should disappear when help from both genders is freely offered, rather than having to be asked for. If acceptance of help is also based on expertise of the help giver, then men should accept help differently from men and women only on tasks in which one gender might have greater abilities than the other. Whether or not men and women selectively accept help depending on the gender of the helper, however, has not been investigated.

Whether or not men and women accept offered help could also depend on the context in which it is presented. As socialized gender roles for men emphasize independence (Addis & Mahalik, 2003), offers of support that emphasized one's need for help may be more likely to be rejected than those that simply offer needed services. That is, men may be more likely to accept an offer like "would you like me to reach that for you?" than "do you need help reaching that?" It is possible that men are just as likely as

women to accept the support itself, but that there are gender differences in accepting the role of one needing help. As no studies have examined gender differences in accepting offered help, there is also little known about the influence of the context of the offer.

Of course, the decision to use offered support is influenced by more than just the gender of the support giver. Familiarity with the support giver is also a likely influence. In Study 2b, participants estimated there would be fewer costs and greater potential benefits when requesting help from a friend rather than a stranger. It is uncertain, however, if this would also apply to accepting help. If ego threat is in fact a driving force in deterring males from using support, accepting support from a stranger may carry fewer ego or social costs, since one is unlikely to see them again. This is supported by a study showing that, among males assigned to receive help, those with the most negative self-evaluations afterwards were those who received help multiple times from a close friend (compared to receiving help a single time and/or from strangers; Nadler, Fisher, & Itzhak, 1983).

Alternatively, males may feel that, similar to asking for help, accepting help from a friend would be less awkward or embarrassing than accepting help from a stranger. One study actually found that greater embarrassment was reported in subjects that requested help from someone they would never see again compared to someone they would meet again in the future (Wallston, 1976), supposedly because they would be unable to reciprocate their support. It is uncertain, then, whether men and women would be more likely to accept support from strangers, or those with whom they had previously interacted. As the studies in chapters 1 and 2 used either friends or strangers, it would be useful to simultaneously look at those with whom subjects are or are not familiar to

determine how this influences support use for men and women, and whether the gender of supporters matters more for familiar or unfamiliar supporters.

Another question that could potentially speak to the robust gender difference in support use is how social support influences stress appraisal processes for men and women. While social support has been found to buffer stress, the cognitive mechanisms whereby this occurs are unknown (Cohen, 1988), and it is possible that it does not do so equally across genders. Self-efficacy, for example, has been suggested as an important cognitive element of perceived stress (Bandura, 1986), and social support may alter stress by influencing self-efficacy. Erdwins and colleagues (2001) found that organizational support buffered work stress for women, but this was completely mediated by support-related increases in self-efficacy (Erdwins, Buffardi, Casper, & O'Brien, 2001). Whether or not this occurs in men, however, has not been examined. While receiving support could increase one's perceived ability to conquer problems, the need to rely on others to overcome obstacles could actually decrease self-efficacy for some (Fisher, Nadler, & Witcher-Alagna, 1982). This could be particularly true for males, for whom independence in problem solving is emphasized (Brannon & David, 1976). At this point, however, it is unknown how self-efficacy predicts support seeking in men and women, or whether receiving support changes self-efficacy differently across genders.

There could also be gender differences with the appraisal process of perceived control. Along with self-esteem, perceived control has been postulated to predict the choice and efficacy of one's coping strategies in response to stress (Thoits, 1995; Folkman, 1984), yet the way in which it influences coping may differ across genders. Among females, having an internal locus of control has been found to predict greater

support mobilization (Eckenrode, 1983), which could suggest that women feel they are more in control when they have others' resources available to address a situation. It is unclear, however, whether this would be the case in men, or whether the opposite may be true. In fact, it has been postulated that men do not seek support partially because doing so would decrease their perceived control (Addis & Mahalik, 2003). In one study that interviewed men about social support use, not wanting to relinquish control was given as a common reason for not using professional support services (Tudiver & Talbot, 1999). It could be, then, that men perceive having less control over a situation when others help them address it. Little is known, however, about how social support influences perceived control, or how it does so differently for men and women.

The purpose of the current study was to investigate gender differences in accepting help that is freely offered. If men use help from women because they feel women are more likely to give support than men, then their preference for female helpers should disappear when help is freely offered. Alternatively, if they feel that women are more capable of providing help, differences seen in asking for help should also be seen in accepted offered help. Specifically, we sought to investigate a) whether men and women accept help with different frequency, and b) whether the choice to accept help was influenced by the gender of the individual offering help. In order to determine how appraisal processes influence help acceptance (and visa versa), we also explored c) whether general measures of control and self-efficacy predicted whether or not subjects would accept help, and d) how the choice to accept help influenced perceptions of control and self-efficacy, and whether it did so differently for men and women. Finally, we also sought to explore how other factors such as e) the wording of the support offer

(emphasizing the need for help) or f) the familiarity with the support giver, influenced whether or not men and women accepted support.

Methods

Overview

Participants were given a difficult task to do, and were given less of the needed information for the task than a confederate completing the same task. The confederate was someone they had either worked with earlier in the experiment, or never met. The confederate offered two kinds of assistance; assistance with what was presented as a spatial reasoning task, and offering to act as an advocate for the participant due to their unfair disadvantage. The first offer of support was or was not prefaced by asking whether the participant needed “help.” Participants’ ratings of self-efficacy and locus of control were measured prior to and following offers of help to see if accepting or declining support influenced these variables in any way.

Participants

Participants were 157 undergraduates (94 female) at a large western university, ranging in age from 18 to 27 ($M = 20.51$, $SD = 1.67$). Participants were primarily Asian (60.5%), Caucasian (19.1%), and Latino (16.6%), with the remaining subjects being Black (1.3%) or other/declined (2.5%).

Measures

Accepting support was measured by a confederate recording whether or not the participant accepted task-related support and non-task support offered by the confederate. The task for which confederates offered help was presented as a spatial reasoning task, an area in which women are often considered less skilled than men, thus women’s abilities

would not necessarily be favored and maybe even disfavored. The non-task support was simply to talk the experimenter on behalf of the subject to tell him/her that the subject had had an unfair disadvantage. This type of support was meant to be gender neutral in perceptions of expertise.

Participants filled in a survey at the beginning and end of the study to measure change in locus of control and self-efficacy. Locus of control was measured with items from Rotter's Locus of Control Scale (Rotter, 1966). This is a well-validated, highly-used measure that assesses overall perceived control. Those with an internal locus of control (LOC) feel they control their own actions and fate, while those with an external LOC feel that these are controlled by the external world. This scale contains 23 forced-choice items, each of which presents subjects with a statement that indicates internal locus of control (e.g. "what happens to me is my own doing") and one that indicates external locus of control (e.g. "many of the unhappy things in people's lives are partly due to bad luck"). Rather than present them in forced-choice format, we chose 12 of the 46 statements and presented them with Likert scales on which subjects indicated the degree to which they agreed with the statement (from 1, *strongly disagree*, to 6, *strongly agree*).

Self-efficacy was measured using Schwarzer and Jerusalem's General Self-Efficacy Scale (1995). This measure contains ten statements indicative of high self-efficacy (e.g. "I can usually handle whatever comes my way"), and subjects rate the degree to which they agree with each statement from 1, *strongly disagree*, to 6, *strongly agree*.

Self-efficacy and locus of control questions were randomly arranged among other filler questions so as not to draw attention to the constructs or the fact that they were

being measured twice. In the survey at the beginning of the study, they were dispersed among items from a standard personality inventory. The second survey randomly arranged the questions of interest among those from an attachment measure.

In order to maintain experimental control, participants' own friends were not used to assess help offers from friends vs. strangers. Instead, half the participants were assigned to interact with the confederate in a way that would help them get to know each other better before the confederate offered to help them. While this did not make them as familiar with each other as friends would be, it still greatly increased familiarity compared to strangers, and thus served as a proxy for evaluating help from friends and strangers.

Procedure & Manipulation

Participants were told that the study was assessing reading, writing, and spatial reasoning tasks in college students. They filled out the initial self-efficacy and locus of control questionnaires, and then were told they would complete a memory exercise. Participants were randomly assigned to do this either alone or with a partner. Those assigned to do it alone were given ten minutes to write a paragraph about their first week of college. They were asked to provide whatever information they thought was important in as much detail as possible. For those assigned to do the task with a partner, a confederate (either male or female) was brought into the room posing as another subject. The two were instructed to tell each other about their first week of college in detail, describing whatever they thought was important or relevant. This task was meant to instill a sense of familiarity and camaraderie between the subject and the confederate so that the two did not feel like complete strangers.

The participant was then told they would do a spatial reasoning task. For those who completed the previous task alone, a confederate was brought into the room at this point. For those who completed the previous task with the confederate, the confederate simply remained in the room. The experimenter explained that they were both doing the same task and there was only one stopwatch available, so they would need to work at the same table. The subject and confederate were each given a map of downtown Boston, and the experimenter instructed them to each write out on a separate sheet of paper step-by-step directions from one marked point on the map to another, paying close attention to one-way streets, and when they finished they should record on the page how long the exercise took them. The experimenter explained that if their written directions were inaccurate or they were too slow, they would have to complete additional map tasks before moving on, whereas if they were quick and accurate they could move on to the last task. This was meant to motivate them to perform well and, consequently, to make the help the confederate offered seem valuable. The experimenter noted that the two of them were not racing each other or in direct competition in any way. Finally, the experimenter told the confederate that after this task he/she would be moved to another room, so he/she could just collect the maps and directions and bring them to the experimenter when they were both finished.

The participant was deliberately given a poor copy of the map on which arrows and streets were extremely difficult to read, while the confederate's map was somewhat clearer. The confederate sat next to the subject at the same table, so their maps were visible to each other. After one minute passed, the confederate offered the participant assistance. In order to examine the effects of the context of the offer on participants'

acceptance, half of these offers were randomly assigned to be prefaced with the specific question, “Do you need help?”, followed by, “I think my map is a lot better than yours, if you want to look at it.” In the other half of the trials, the confederate said only the latter statement, without specifically labeling it as “help.”

Once both the confederate and subject had finished the task, the confederate gathered up the maps and, before leaving the room, offered to speak to the experimenter on behalf of the subject and tell him that the participant’s map was of poor quality. For each of the offers of help, the confederate noted whether the participant accepted or declined. After the confederate left, the participant was given the second self-efficacy and locus of control survey. The experimenter told them they would see some of the same questions from the first survey, but they should put however they currently felt instead of trying to replicate their initial response. Finally, participants were debriefed and excused.

Results

Accepting Offers of Task-Related Support

For this study, the confederate offered task-related support by offering to share their map with the confederate. They did not actually provide help with the spatial-reasoning aspect of the task, and male and female confederates used the same map to share with the confederate, so the help they actually gave was equivalent and unrelated to any innate ability or expertise. Men may, however, be perceived as more capable of providing any help related to a spatial reasoning task.

A binary logistic regression was performed to assess which variables influenced participants’ acceptance of task-related support. Independent variables included were

participant gender, confederate gender, familiarity with confederate, and whether the word “help” was used in the offer.

Participant Gender. The regression revealed a significant main effect of participant gender on help acceptance, $\chi^2(1, N = 146) = 4.70, p = .03$ (Figure 3.1). In 74.7% of cases, female subjects accepted support, while males accepted in only 57.6% of cases.

Confederate Gender. There was no main effect of confederate gender on accepting help. Help from female confederates (65%) and male confederates (70%) was accepted equally overall.

Familiarity with Confederate. There was no main effect of familiarity with the confederate on whether or not participants accepted help, showing that participants accepted equally from confederates they were meeting for the first time (67%) and those with whom they had previously interacted (67%).

Offering “Help.” The regression revealed a main effect of phrasing of the support offer (using “help” or not) on whether or not participants accepted help. When confederates specifically asked if the participant needed help, participants accepted only 60% of the time. When this was not included, participants accepted 74.5% of the time. This difference was significant, $\chi^2(1, N = 143) = 4.43, p = .035$ (Figure 3.2).

Participant Gender x Confederate Gender. There was no overall interaction of confederate and subject gender on accepting help.

As in Study 2a, separate chi square analyses were the run for each confederate gender to see if males and females accepted help differently for a particular confederate gender. This was done to explore whether men and women differed in help acceptance

for one particular confederate gender, rather than exploring how men and women different in help acceptance across confederate genders. For female confederates, this test was significant, $\chi^2(1, N = 81) = 4.25, p = .039$. As shown in Figure 3.3, females accepted help from other females 74.5% of the time, while males accepted only 52.8% of the time. For male confederates, acceptance rates for males (66%) and females (72.5%) was not significantly different.

Participant Gender x Familiarity with Confederate. The regression showed no significant interaction of gender and familiarity with the confederate, suggesting men and women were equally influenced by whether or not they had interacted with the confederate previously.

Chi-square analyses exploring participant gender and help acceptance were performed separately for those who had done the prior task with the confederate and those who had not. Among those meeting the confederate for the first time, there was no difference between male and female participants in whether or not they accepted help. For those who had completed the prior task with the confederate, however, there was a marginal effect, $\chi^2(1, N = 76) = 3.21, p = .07$. In this case, females accepted help more than males (75.5% and 55.6%, respectively).

Participant Gender x Offering “Help.” The regression showed no interaction of wording and gender on accepting support, suggesting that men and women were equally influenced by whether or not the word “help” was used. Chi-square analyses assessing participant gender and help acceptance frequency were performed separately for those asked specifically if they needed help and those who were simply offered assistance. There was not a significant gender difference for either group.

Accepting Offers of Non-Task Related Support

Non-task related support was represented by the participant offering to speak to the experimenter on behalf of the participant. It is unlikely that either gender would be perceived as more capable of providing this than the other.

A binary logistic regression was performed to determine which factors influenced participants' acceptance of offered help. Independent variables in the regression were participant gender, confederate gender, and familiarity with the confederate.

Participant Gender. The logistic regression showed no main effect of participant gender on whether or not participants accepted help (Figure 3.1). Overall, males (57%) and females (58%) accepted non-task related support quite similarly.

Confederate Gender. The regression also showed no main effect of confederate gender on acceptance of support. Again, accepting help from female confederates (57%) and male confederates (59%) was remarkably similar.

Familiarity with the Confederate. Those who had previously interacted with the confederate accepted their help more than those who had not done an earlier task with them (63% and 51%, respectively), but this difference was not significant.

Participant Gender x Confederate Gender. The regression showed no interaction of participant and confederate gender on accepting help. Separate analyses were performed to test for gender differences in acceptance for those with male confederates and those with female confederates. There were no significant differences for either.

Participant Gender x Familiarity with Confederate. A logistic regression showed no interaction of gender and familiarity with the confederate on accepting

support. Separate chi square analyses were also run for those who had previously interacted with the confederate and those meeting them for the first time. Men were less likely than women to accept help from people they had not interacted with before (46% and 54%, respectively), and men were more likely than women to accept help from someone they were more familiar with (70% and 59%, respectively), but neither of these differences were statistically significant.

Participant Gender x Confederate Gender x Familiarity with Confederate.

The regression showed no significant three-way interaction between the variables on accepting non-task related support.

Locus of Control

Locus of control was measured twice in the experiment, once at the beginning and once at the very end. This was used both as a subject variable and as a dependent variable. Initial measures were used to assess whether internal or external locus of control predicted whether or not participants would accept offered support. The second measure was used to assess whether accepting or declining support shifted locus of control to be more external or internal.

Predicting Support Acceptance. Locus of control scores on the initial measure ranged from 28 (extremely external) to 55 (extremely internal), $M = 43.69$, $SD = 5.59$. A t-test was used to assess whether those who accepted help ($n = 99$) were significantly different in their locus of control than those who did not accept help ($n = 47$). There was no significant difference between the two groups.

Change in Locus of Control. A repeated measures ANOVA was used to assess whether locus of control changed significantly from time 1 to time 2, and whether certain

variables influenced this change. Overall, locus of control was significantly more external (lower scores) at time 2, $F(1, 141) = 11.67, p = .001$.

There was no interaction between time and whether or not participants accepted help, suggesting that those who accepted help did not become more or less external in their locus of control than those who did not accept help. There was no main effect of gender on initial locus of control, but there was a marginal interaction between time and gender, with females becoming more external over time than males, $F(1, 122) = 3.60, p = .06$. This did not interact with whether or not they accepted help.

Self-Efficacy

Like locus of control, self-efficacy was measured twice in the experiment, at the beginning and the end. Again this was used both as a subject variable and a dependent variable to assess whether self-efficacy predicted accepting help or was influenced by it, positively or negatively.

Predicting Support Acceptance. Self-efficacy scores in the initial measure ranged from 35 (low self-efficacy) to 64 (high self-efficacy), $M = 50.59, SD = 6.04$. A *t*-test was used to assess whether those who declined help from the confederate were different in self-efficacy than those who accepted help. The test showed no significant difference between them.

Changes in Self-Efficacy. A repeated measures ANOVA was used to assess whether self-efficacy changed from time 1 to time 2, and whether certain variables influenced this change. The data show that self-efficacy did not change from time 1 to time 2 overall, nor did this interact with whether or not subjects accepted help. There was also no interaction with gender.

Discussion

These data show that, for certain types of support, males were less likely than females to accept the support from confederates. This parallels data from the previous study, showing that males were less likely than females to ask for help. However, these data show important differences compared to the previous study. Unlike before, this difference was not due to males being unwilling to use help from other males. In fact, it was with female confederates that a difference emerged, with male participants being less likely to accept task-related help from female confederates than were female participants were. It appears, then, that for task-related assistance, males are willing to ask females for help, but less willing to accept it.

These data support findings from Study 2b suggesting that males' low rate of asking males for help is at least partially due to believing males would be less likely to agree to help them. When the question of the helper acquiescing is removed – that is, when the helper offers help without having to be asked for it – this gender difference was not seen, and was even reversed. This supports the notion that men believe that other men are simply less willing rather than less capable of giving help. Further support for this was seen in the difference in their acceptance rates based on the task. For a task on which men might have greater expertise, the spatial reasoning task, men were actually more likely to accept help from other men than from women. Even though the help being offered by confederates was simply the use of their map and had nothing to do with their abilities, men may have assumed that accepting help from a female would be less effective or less appropriate for the given task.

This is also supported by the fact that men were no less willing to accept help from women for non-task related support – in this case, the confederate offering to act as an advocate for the participant. Males in this case were just as likely to accept help from male and female confederates, and just as likely to accept help overall as female participants. This again suggests that males seek help based on how willing the helper is perceived to be and perhaps also based on perceived capability. Help in this case was not presented in the context of a gender-specific task, and help from male and female confederates was accepted with equal rates.

As hypothesized, males were less likely to accept support when it was offered in the context of them needing “help.” When framed in this context, males accepted help only 50% of the time, compared to 68% when the word “help” was not used. Unexpectedly, however, females’ level of acceptance dropped just as much in this situation, from roughly 81% to 67%. It has been hypothesized that males use support less because it threatens their masculinity and ego to do so (Addis & Mahalik, 2003). It seems, however, that the idea of needing help is also off-putting for females. Females may use support more because they see it simply as using all the resources available to them rather than not being able to complete tasks themselves. It could also be that in the current task the question “do you need help?” suggested that the participant was struggling because of their abilities and not because their map was of poor quality. Accepting help in this case, then, might be seen as an admission of failure, which was not really accurate.

It appears that, overall, whether or not subjects are acquainted with someone does not influence whether or not they will accept help from them, though males were

marginally less likely to accept help from someone with whom they had previously interacted. It is unlikely that men would feel these people would offer less helpful support than strangers, thus this seems indicative of potential ego threat. If social gender stereotypes tell men they are not supposed to need help, it may be less awkward or embarrassing for them to accept help from someone they have not met before or are not likely to be recognized by again. If it is someone with whom they have shared personal stories and may see on campus, however, it may be more important to conform to gender stereotypes and not admit to needing help. This was, however, only marginal, suggesting that if help is really necessary, ego threat may not be the ultimate driving factor in whether or not men will accept help.

Both locus of control and general self-efficacy proved poor predictors of whether or not subjects would accept offers of support. Also, neither of these indices changed, for males or females, based on whether or not they accepted help. It could be that those with high self-efficacy look for many solutions to a problem, which could include accepting assistance from others. The main goal of those with high self-efficacy may be completing a task, not necessarily doing it by themselves. Similarly, while accepting help could be indicative of an external locus of control since it allows the outside world to determine the success of the individual, participants are given the choice of whether or not to accept, thus someone with a high internal locus of control could still see receiving help as indicative of shaping one's own fate.

It is also possible that simply receiving support does not influence self-efficacy, but that the content of the support may. That is, support may more directly influence self-efficacy if it includes reassurance and praise of the individual's abilities. If this is the

case, emotional and appraisal support would be more likely to influence self-efficacy. The lack of change in self-efficacy may also be due to the measures used. The scale used is intended to measure trait self-efficacy, thus the scores may not be very amenable to change. It is also possible that support does not influence general self-efficacy, as measured by the scale used here, but more task-specific self-efficacy.

Looking at the results of this and the prior study, the data suggest that males are more willing to accept help from other males than they are to ask them for it. What is unclear, however, is whether there are unseen costs for this behavior. As noted previously, the estimates of costs and benefits given in Study 2b do not fully explain men's help-seeking behavior. It is possible that there are more costs than are currently apparent. Accepting help appears not to have influenced their locus of control or self-efficacy, but more research is needed to determine how receiving support affects mood, physiology, and other variables, and how it does so differently in males and females.

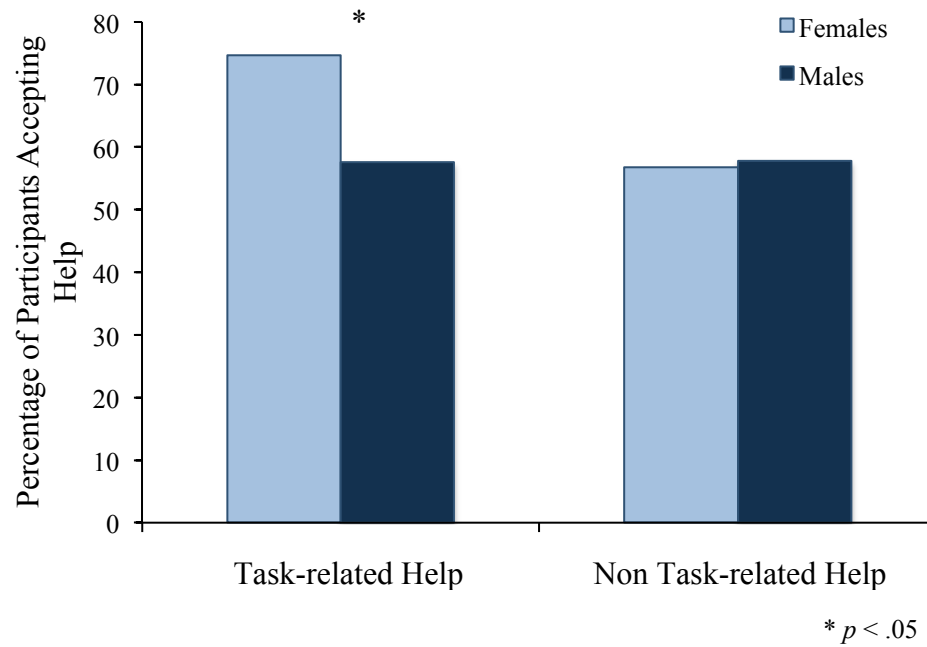


Figure 3.1. Percentage of participants accepting informational/instrumental help (task-related), and instrumental/emotional help (non task-related), divided by gender.

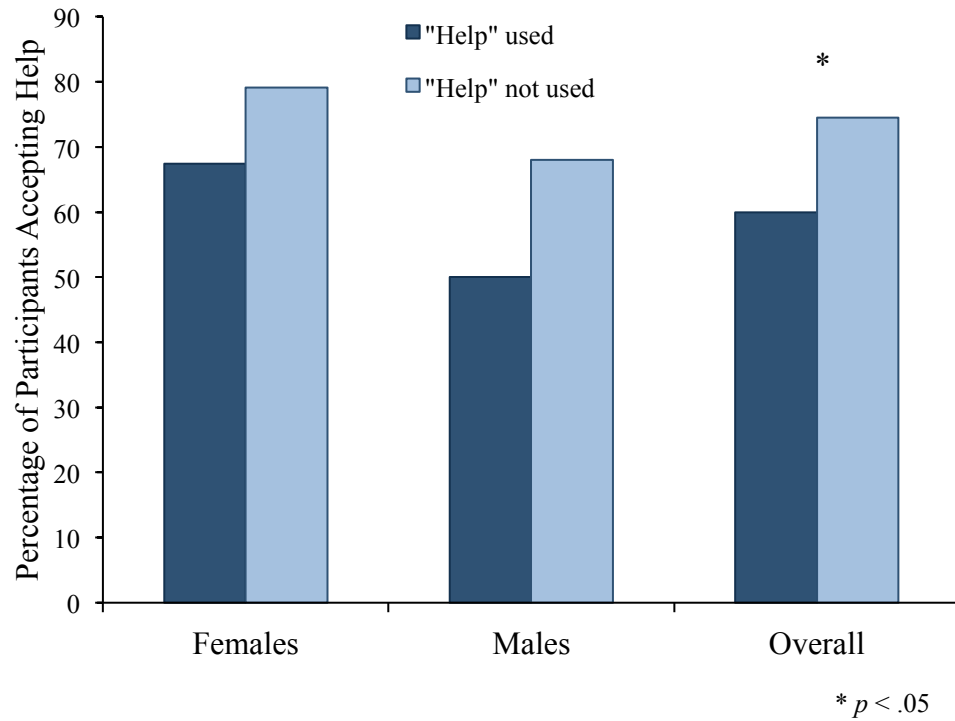


Figure 3.2. Percentage of participants accepting task-related help, divided by whether or not the confederate specifically used the word “help” when offering.

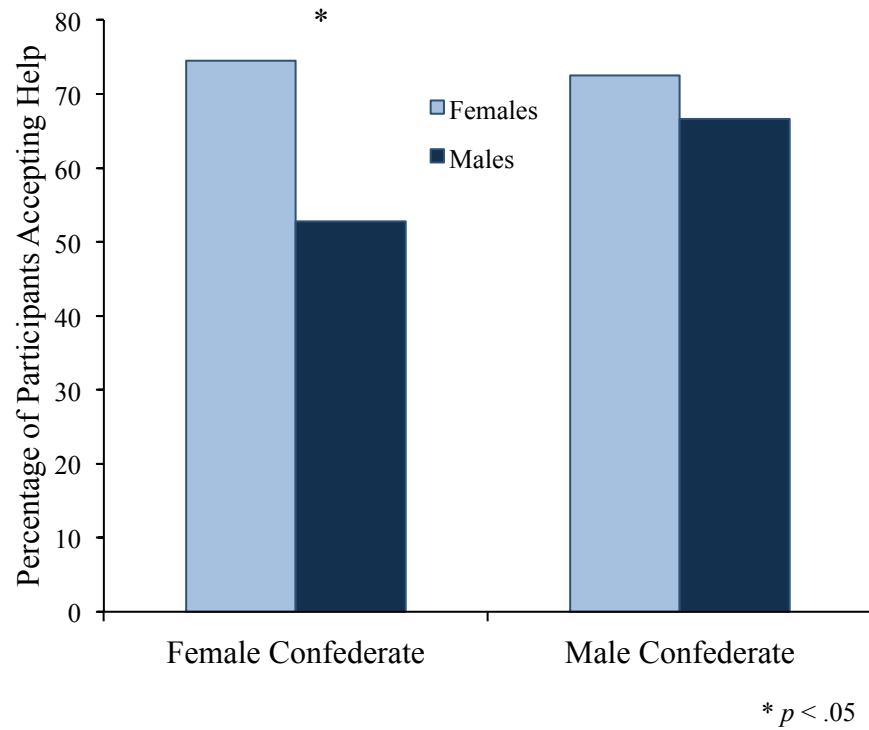


Figure 3.3. Percentage of participants accepting task-related help, divided by participant gender and confederate gender.

Chapter 4 – Study 4

Introduction

Social support has been found to buffer stress (Cohen & Wills, 1985), which could help explain why it is associated with myriad health benefits (House, Landis, & Umberson, 1988; Uchino, Cacioppo & Kiecolt-Glaser, 1996). Men with adequate social support during stress are protected against stress-related all-cause mortality (Rosengren, Orth-Gomer, Wedel, & Wilhemsen, 1993) and show lower incidence and severity of a variety of other problems (Olstad, Sexton, & Sogaard, 2001; Lepore, 1992). However, despite these long-term benefits of support, men consistently use social support less than women when facing stress (Taylor et al., 2000).

Many possible reasons for this discrepancy have been offered and explored here and elsewhere (Taylor et al., 2000). Studies included here show that the difference may be partially due to perceived availability of help. Study 1a showed that for certain types of resources, particularly passive resources, males perceived having fewer of those resources available to them when their friends were present than females did. Studies 2a and 2b showed that males were less likely than females to ask for instrumental help, and that this was likely due to believing others were unlikely to respond to their support requests. It could be, then, that men do not use support because they do not believe it is available to them.

It is also possible that certain types of support are simply less effective for men than for women. Because traditional gender roles emphasize toughness and emotional non-disclosure for men, using emotional support in particular may be ego threatening for men, and may itself be stressful (Addis & Mahalik, 2003). Consequently, men may avoid

emotional support not because it is unavailable, but because it is not effective in reducing stress. Men in Study 1a may have perceived fewer passive resources available to help them address situations not because the resources themselves were unavailable, but because they would not have actually helped men deal with the stressors. Results from Study 3 suggested that men's use of support is at least partially driven by how useful they believe help will be, which could also apply to their use of emotional support. It remains to be seen, then, if men use emotional support less than women because of barriers to obtaining it, or because it is actually less effective for men in reducing stress.

This question is especially relevant when looking at the gender of support givers. When men do use emotional support, it is most often from women (Vanfossen, 1981; Cutrona, 1996). There is a good deal of literature showing that this support from women is effective in benefiting men's long-term health. Men actually receive more health benefits from marriage than women, an effect believed to be partially driven by the quality and quantity of support men receive from their wives (Kiecolt-Glaser & Newton, 2001). Married men are also more likely to survive heart attacks than unmarried men (Chandra, Szklo, Goldberg, & Tonascia, 1983), and men who received frequent visits from their wives recover faster from major surgery than men not receiving such support (Kulik & Mahler, 1989). While this emotional support from women clearly is beneficial for men, it is unclear whether it is used more because it is more effective than support offered by men, or because it is more available. Women are more empathetic than men (Thoits, 1995), which could mean that receiving support from a female is more calming and effective than receiving support from a male. However, this could also mean that women are simply more likely to offer emotional support than men.

It remains to be seen, then, if the same emotional support were made available from male and female supporters, whether it would be equally effective for male and female support receivers. If males and females react the same way to the same support, regardless of the gender of the support giver, it could suggest that men simply use the support that appears effective *and* available, which happens to be from females. This would also imply that decreased use of support by men in general is due mostly to barriers in the process of obtaining support, such as believing others would not agree to help them, and not due to differences in the process of actually receiving support. Alternatively, if support appears to be less calming for men even when they receive it without asking, this could suggest that the process of receiving support is itself distressing, making men less likely to use it despite long-term benefits.

Finally, if men benefit more from female support than male support, even when the support itself is equal, it could suggest a role of ego threat in support receipt. Men may seek and accept support from women simply because they find it distressing to receive emotional support from a male, since this type of help is most contrary to the typical male role. Since nurturing and supporting are part of the female role (Barbee et al., 1993), it may be less of a gender role conflict to receive emotional support from a female than a male. This possibility has some support in the literature. One study showed that receiving support from a female during a speech task lead to lower blood pressure in male and female subjects, while having a supportive male audience member during the same task lead to greater increases in blood pressure than having an unresponsive male audience member (Glynn, Christenfeld, & Gerin, 1999). These differences emerged despite the fact that the content of the support was judged to be the same. This suggests

that simply receiving support from males, despite the content of the support, is distressing or less effective for both men and women.

It is also possible, however, that this type of support was one not typically provided by males, and that in the right context with the right type of support, support from males would be just as ample and effective as that from females. Emotional support described in the literature is primarily active emotional or cognitive coping (Billings & Moos, 1981; Folkman & Lazarus, 1980; Lazarus, 1966), that is, support that focuses on the stressful event itself and tries to change one's emotional response to it. There is, however, another type of emotional coping that has received less attention; namely, avoidant coping or distraction (Lazarus, 1980; Lazarus 1966), in which one controls emotional responses by ignoring or being distracted from the problem. While females may be solicited more for the former type of support, it is possible that this latter type, distraction or avoidant coping, is equally sought and/or equally effective from males and females, as one gender may be no better than the other at providing distractions.

While "avoidant coping" often has negative connotations because it includes substance use and abuse, other forms of distraction may actually be beneficial if they prevent rumination or perseverative cognition, which has been linked to both short-term cardiovascular reactivity and the development of cardiovascular disease (Larsen & Christenfeld, 2009). There is some evidence that distraction could play such a cardio-protective role. Participants in one study were either given a distraction following a stressful task (mental arithmetic with harassment) or were left to sit and think about the stressor (Glynn, Christenfeld, & Gerin, 2002). Those with a distractor showed greater cardiovascular recovery than those allowed to ruminate, suggesting that distraction may

improve physical and cognitive recovery from stress. The authors posit that social support may play such a role; while some may use support to ruminate on stressful events, searching for solutions or reappraisals from social others, some may use support as a distraction to bring about short-term recovery. Because males are discouraged from self-disclosing or engaging in other forms of emotional support, distraction may be an especially attractive form of social support for them.

The literature is somewhat divided on whether distraction is used more by males or females. Large-scale community surveys have shown that females use avoidant coping and distraction more than males during major life events (Tamres, Janicki, & Helgeson, 2002; Billings & Moos, 1980; Stone & Neale, 1984), though females use virtually all coping styles more than men, including rumination (Tamres et al., 2002). Data on dealing with depression show a different pattern in distraction and rumination. Nolen-Hoeksema's Response Style Theory (1987) states that women are more likely to deal with depression by ruminating on their feelings, while males are more likely to use distraction. A study with adolescent boys found that, when facing a parental divorce, boys were more likely than girls to use their friends for distraction (Wallerstein & Kelly, 1996). It could be that, while males do not use distraction more than women overall, it is their preferred form of social support.

Study 3 evaluated the effects of support receipt on self-efficacy, and generally found it unchanged. It is also possible that self-efficacy was not changed because global rather than task-specific measures were used. Related to this, it may be that the content of the support, rather than simply receiving it, influences self-efficacy. A friend may have to say, for example, that they have confidence in your abilities in order for self-efficacy to

change. The effects of emotional support on task-specific self-efficacy, and whether this varies by gender, remains unknown, and is worth exploring as a possible mechanism of stress buffering.

The purpose of the following study was to investigate how different types of support influenced recovery from stress for men and women. Specifically, we sought to examine whether simply receiving emotional support – without having to ask for it or admit that one needs it – had differential effects on physiology and affect in men and women recovering from a stressful incident. We also sought to determine whether emotional support given in this context was equally effective from male and female supporters, or whether emotional support from males to other males was actually less effective. Related to this, we wanted to compare the effectiveness of emotional and avoidant or distracting coping from different gender supporters. Because distraction has only been shown to reduce stress during the period when individuals are actually distracted, we were also interested in whether those who are distracted, either alone or by a social other, maintain that level of recovery, or whether distraction is only effective until it ends. Finally, we were also interested in seeing how emotional support following a stressful task influenced task-specific self-efficacy, and whether it did so differently for men and women.

Because men do receive such profound health benefits from social support, we hypothesized that males would react similarly to females when receiving social support. We predict, however, that emotional support will be more effective for males when coming from a female, simply because males are more accustomed to receiving emotional support from females, while gender of the support-giver will not matter to

females, who used support equally from men and women throughout all the previous studies. We also predict that, overall, emotional support will be more effective from females, while males and females will provide equally effective distraction support. Finally, we hypothesize that emotional social support will lead to enhanced self-efficacy more so than distracting support, as the content of the support will include reassuring the participant of their abilities.

Methods

Overview

Participants performed a stressful mental arithmetic task while being harassed by the experimenter. Afterwards, participants either sat alone or talked to a male or female confederate. Within each of these conditions, participants were either distracted or told to focus on the previous task. Following this, participants sat alone, occasionally recording their thoughts. Finally, participants were given the choice between a fun, challenging task (high self-efficacy) or an easy, boring task (low self-efficacy). Trait rumination was measured, and cardiovascular reactivity was recorded throughout the study

Participants

Participants were 259 undergraduates (155 female) at a large western university. Most participants were Asian (71.4%), Caucasian (16.2%) and Hispanic (11.2%), the remaining few being Black (0.4%) or “other” (0.8%). Participants received course credit in exchange for participating.

Measures

Cardiovascular reactivity was measured throughout the experiment using an Ohmeda Finapres 2300 BP monitor (TNO Biomedical Instrumentation, Belgium). This is

a noninvasive instrument that takes beat-to-beat readings through an inflatable cuff worn on the middle finger of the non-dominant hand.

Trait rumination was measured using selected items from Sukhodolsky et al.'s Anger Rumination Scale (2001). This scale contains 19 self-reflective statements, e.g. "I re-enact the anger episode in my mind after it has happened," which subjects rate in terms of how often they do or think the given statement from 1 (*almost never*) to 4 (*almost always*). The scale has been shown to have high internal consistency and high test-retest reliability. We selected 6 representative items from this scale, and gave them to subjects with the same 1-4 Likert scale as the original. Cronbach's alpha for the six items was 0.81, suggesting high internal consistency for the selected items.

Task-specific self-efficacy was not measured using a standard scale, but was done by observing behavior that seemed indicative of high or low self-efficacy. Participants were given the choice between a task that gave them an opportunity to solve problems and show mastery but would require some skill, and a task that required no skills and had no opportunity for excelling. The challenging task was described as a collection of "fun but challenging math puzzles," while the easy task was simply copying text from a textbook onto a page. This task was made to sound particularly boring in order to ensure there was no draw to the task itself. It was believed that those who felt themselves at all capable would choose the more entertaining task, while those with no confidence in their math abilities would choose the boring one to avoid possible failure.

Finally, state rumination was assessed using a simple questionnaire that asked participants to rate, during the thought-sampling period when they all sat alone quietly, how much they thought about the math task, the experimenter's treatment of them, and

their performance on the task. These were measured on a Likert scale ranging from 1 (*not at all*) to 6 (*a great deal*). Participants also rated, on the same scale, the extent to which they felt stressed, embarrassed, calm, and angry during the thought sampling period.

Procedure

Participants were told that the study was examining how performing verbal and quantitative tasks influenced physiological reactivity. After being fit with the finger cuff, participants sat quietly for five minutes to record baseline cardiovascular measures. They were then given a simple five-minute analogy task, and were told that it constituted the verbal portion of the experiment.

Next, participants were subjected to the stressor task, which they were told constituted the quantitative portion of the study. Participants performed serial subtraction with harassment from the experimenter. This common laboratory stressor has been shown to produce significant social evaluative threat (Gruenwald, Kemeny, Aziz, & Fahey, 2004), which could influence self-efficacy and make subjects receptive to social reassurance. Thus, it was a fitting task for the current study. Participants were told to start at the number 2000 and subtract continuously by 13's, doing so aloud as quickly and accurately as possible for three minutes. During the three-minute period, the experimenter made the following interruptions in an irritated, patronizing tone:

(after 30 seconds): *you're really not going fast enough. You'll have to start again, and go faster this time.*

(after 75 seconds): *Ok, you are going to have to start again. It's clear that 13 is too difficult, so why don't you count by 7's so it will be easier.*

(after 120 seconds): *Experimenter: I am going to start you one more time and if you do not speed up I will not be able to use your data.*

After three minutes passed, the experimenter said time was up and left the room. At this point, the participants were randomly assigned to either sit alone or with a confederate for the next five minutes, depending on condition (see below). Following this all participants sat alone for a five-minute rumination period, during which the experimenter knocked on the door three separate times. Participants were told beforehand that each time they heard a knock on the door they were to write down whatever they were thinking about immediately before the knock. This was done to assess rumination on the stressor task. After this thought sampling period, state self-efficacy was measured by giving participants the choice between the math puzzles or the word copying. After they made their choice, participants were given the final questionnaires, debriefed, and excused.

Experimental Manipulation

Participants were randomly assigned to spend the five-minute recovery period after the stressor task alone or with a confederate. Additionally, they were randomly assigned to either focus on the task or be distracted from it, whether they were alone or with a supportive confederate. This created a 2 x 2 design, consisting of the following conditions:

Individual Rumination. Participants in this condition sat alone, and were told to think about the previous math task for the next five minutes. They were not told to think about any particular part of the task, but simply to mentally recreate the task and the feelings it created.

Individual Distraction. These participants sat alone for five minutes filling out a survey about their college experience, where they were from, where they currently lived,

and other unrelated information. They were told there were no right or wrong answers, and that finishing was not essential. The survey was purposefully made to take longer than the allotted time to prevent participants from finishing early and thinking about the previous task, and was meant to be minimally stressful.

Social Rumination/Support. In this condition, a confederate entered the room posing as a subject who had just completed the same study and was waiting to be debriefed. They asked the subject if he/she had also completed the math task, and talked with the participant about how stressful the task was and how poorly they felt they had performed. The confederate offered support, empathy, and reassurance, and made sure the conversation topic remained on the previous math task. Half the time the confederates were male, half the time they were female.

Social Distraction. Confederates in this condition were also posing as subjects awaiting debrief, and talked with participants about school, housing, and other topics that appeared on the questionnaire for those in the individual distraction condition. Before leaving the room, the experimenter expressly told the subject and confederate that they were not allowed to discuss the study. Confederates again were male for half of the cases and female the other half.

Data Reduction and Analysis

The cardiovascular parameters of interest were systolic blood pressure (SBP), diastolic blood pressure (DBP), and heart rate (HR). For each of these, readings were averaged for each minute of the experiment, providing minute-to-minute readings throughout the whole study. These were again averaged over the minutes in each period of interest, the main ones being the stressor task, recovery period, and thought sampling.

In order to assess reactivity, i.e. change from baseline, baseline readings were then subtracted from the averages for each period.

Participants' free responses during the thought sampling period were coded by three independent raters who rated whether the responses included thoughts about 1) the math task and their poor performance, 2) negative thoughts about the experimenter, 3) negative thoughts about the study, 4) the study in general, 5) stress in general, or 6) things unrelated to the study or stress.

Results

Stressfulness of the Task

To determine whether the math task was in fact stressful, a repeated measures ANOVA showed that blood pressure changed significantly from baseline ($M = 115.39$, $SD = 16.82$) to the stressor task ($M = 145.26$, $SD = 22.64$), $F(1, 193) = 819.2$, $p < .001$. Systolic blood pressure changed an average of approximately 30mm during the stressor task, suggesting it was sufficiently stressful.

Thought Sampling

All three judges independently coded each of the three thought sampling responses from each subject, giving each response a code 1-6 as described above. Inter-rater reliability for thought sampling responses was assessed by using an intra-class correlation for each of the three response periods. Single item reliability ranged from 0.76 to 0.85, suggesting high inter-rater reliability for each of the three responses. For each of the three thought sampling responses for each subject, a code was chosen if at least two judges agreed upon it. In the rare case that none of the judges agreed, the experimenter read the response and assigned a code.

Responses were collapsed over the three different samplings to determine whether or not the subject wrote about each of the six different types of responses at any time during the thought sampling period. The final spreadsheet showed either a 'yes' or 'no' for each of the six types of responses for each subject.

Task Rumination. We first examined whether or not participants wrote ruminating thoughts about the math task or their performance on it. To determine which factors predicted this kind of rumination, a binary logistic regression was performed with gender, condition, and trait rumination as the predictor variables and whether or not participants wrote ruminating thoughts as the dependent variable. Trait rumination scores ranged from 7 to 38 ($M = 15.82$, $SD = 4.31$), and were divided by a median split, so participants were classified as either high ($n = 120$) or low ($n = 104$) in trait rumination.

Of these variables, only trait rumination was found to predict ruminating on the stressor task. Those high in trait rumination were more likely to have reported ruminating thoughts on the stressor task, $\chi^2(1, N=224) = 4.38$, $p = .036$, suggesting the scale accurately measured trait rumination. However, as participants filled this out at the end of the study, their responses could have been influenced by whether or not they wrote down ruminating thoughts earlier. There was no interaction between the variables.

Stressful Thoughts. A similar analysis was performed to determine which factors predicted reporting stressful thoughts in general, rather than thoughts specifically about the study. Of the variables entered into the regression, only gender was found to predict stressful thoughts. A separate chi-square analysis showed that females were significantly more likely than males to write about something stressful during the rumination period, $\chi^2(1, N=224) = 4.9$, $p = .027$. There was no interaction between the variables.

Thoughts about the Study. Responses coded 1-4 were combined to determine if participants differed in the degree to which they thought and wrote about the study in general – either positive or negative. None of the subject or independent variables predicted thoughts about the study.

Post-Study Questionnaire

An ANOVA was used to explore whether participants differed on their own ratings of how much they ruminated about the stressor task, and to what degree they felt stressed, embarrassed, calm, and angry during the rumination period.

Participant Gender. Females indicated feeling significantly more embarrassment than males, $F(1, 184) = 5.59, p = .02$, while males indicated feeling calmer than females, $F(1, 184) = 6.28, p = .013$. There was no difference in their estimations of how much they ruminated about the stressor task.

Condition. There was a significant effect of condition on how angry they felt during the rumination period, $F(3, 223) = 4.38, p = .005$. Post-hoc tests showed that those who ruminated alone were significantly angrier than those in all other conditions (for all $p < .02$), while the other conditions did not differ significantly from each other (Figure 4.1). There was no difference between subjects in their estimations of how much they ruminated on the stressor.

Condition x Participant Gender. The data showed no significant interactions of participant gender and condition, suggesting male and female subjects in the same conditions reported similar rumination and affect.

State Self-Efficacy

State self-efficacy was measured by whether or not subjects chose to do the math task or the verbal task at the end of the study.

Participant Gender. A chi-square analysis was used to determine whether male and female participants differed in their choice of task. There was no significant difference between males and females in choosing the math or verbal task.

Condition. A chi-square analysis showed no effect of condition on whether or not participants chose the math or verbal task.

Participant Gender x Condition. A binary logistic regression was used to determine if there was an interaction between participant gender and condition on which task they chose. The data showed no significant interaction.

Confederate Gender. A chi-square analysis showed no difference in task choice based on the gender of the confederate participants interacted with.

Confederate Gender x Participant Gender. A binary logistic regression was performed to determine if participant gender and confederate gender interacted to influence participants' decision. There was no significant interaction.

Cardiovascular Reactivity

The cardiovascular parameters of interest (SBP, DBP, and HR), were assessed both looking at how they changed throughout the experiment and at individual time points. First, a repeated measures ANOVA was performed analyzing change from baseline during the stressor task, recovery period, and rumination period.

Participant Gender. There was a main effect of participant gender on baseline SBP, $F(1, 209) = 9.61, p = .002$, with females having a lower mean baseline SBP than

males. Females were also marginally lower in DBP at baseline, $F(1, 209) = 3.12, p = .079$. There was no gender difference in baseline HR.

There was no interaction of time and participant gender on SBP, suggesting male and female subjects' blood pressure changed similarly throughout the experiment. There was also no effect on DBP or HR.

Condition. The data revealed a significant interaction of time and condition, $F(6, 402) = 3.07, p = .006$. As shown in Figure 4.2, participants in the four conditions were relatively equal during the stressor task and during the recovery period. During the rumination period, however, those in the social support condition showed the greatest amount of recovery, while those in the other conditions stayed relatively the same or increased. There was also a significant interaction of time and condition on HR, $F(6, 376) = 2.25, p = .038$. The data showed the same pattern as that for SBP. There was no effect on DBP.

Participant Gender x Condition. The data showed a marginal interaction of time, condition, and participant gender, $F(6, 374) = 1.85, p = .089$. Changes in SBP over time for male and female participants are shown in Figures 4.3a and 4.3b. As the figures shows, the social support condition yielded the greatest recovery in both male and female subjects, but this recovery was actually greater in male subjects. Males and females in the social distraction condition reacted quite differently, with females showing recovery and males retaining elevated blood pressure. There was no significant effect for DBP or HR.

Individual Time Periods

Next, analyses were performed for cardiovascular reactivity during each of the time periods of interest. Analyses involving confederate gender were done only with

subjects in the social conditions, since this did not apply to participants in the alone conditions.

Participant Gender. The data showed no difference between genders during the stressor period, recovery period, and rumination period for any of the cardiovascular parameters.

Condition. There was no difference between conditions during the stressor period or recovery period for SBP, DBP, or HR. The data did show, however, a marginal effect of condition on SBP during the rumination/thought sampling period, $F(3, 191) = 2.46, p = .064$. Planned comparisons showed those in the social support condition had significantly lower SBP than those in the rumination condition $t(191) = 2.42, p = .016$ and those in the individual distraction condition $t(191) = 2.06, p = .05$, and marginally lower than those in the social distraction condition, $t(191) = 1.74, p = .083$. These differences can be seen in the “Rumination” column of Figure 4.2. The other conditions did not significantly differ from each other.

There was no effect of condition on DBP or HR during the rumination period.

Confederate Gender. There was no difference in any of the cardiovascular parameters during any of the time periods based on confederate gender.

Condition x Participant Gender. There was no interaction of condition and participant gender on reactivity during any of the time periods.

Condition x Confederate Gender. There was a significant interaction of condition and confederate gender on SBP during the recovery period, $F(1, 111) = 7.29, p = .008$. The data show that, for those in the social support condition, blood pressure during this time was lower for those with male confederates than with female

confederates. For those in the social distraction condition, however, those with female confederates had lower blood pressure. This suggests that, while actually receiving support or distractions, participants found support more calming when it came from males and distraction more calming when it came from females. However, this pattern was only found during the recovery period; during the rumination period afterwards, this gender-by-condition interaction disappeared. There was no effect on DBP or HR.

Confederate Gender x Participant Gender. The data showed no interaction of confederate gender and participant gender on cardiovascular reactivity during any of the time periods.

Confederate Gender x Participant Gender x Condition. The data revealed a significant interaction of confederate gender, participant gender, and condition on SBP during the recovery period, $F(1, 111) = 7.65, p = .007$. As shown in Figure 4.4, female participants showed lower blood pressure when distractors were male and supporters were female, while males showed the opposite pattern. Also, differences between conditions were relatively slight for female participants, while they varied greatly for males. This effect disappeared, however, during the rumination period.

There were no significant interactions for DBP or HR.

Self-Efficacy. The data was analyzed to determine whether subjects who chose the math or verbal task at the end showed different reactivity, either during the stressor itself or right before making their decision. There was no overall difference in blood pressure between those who chose the math task and those who chose the verbal task during the stress period or during the thought sampling period.

There was, however, a significant interaction of gender and task choice on SBP during the stress task, $F(1, 63) = 5.98, p = .017$. Inspection of the data showed that males who chose the math task had shown higher blood pressure during the stressor task than males who chose the verbal task, while for females this pattern was reversed. The same pattern was seen for diastolic blood pressure, $F(1, 66) = 5.14, p = .027$. This pattern was the same for SBP during the rumination period, $F(1, 66) = 6.14, p = .016$ (Figure 4.5).

Discussion

These data support the notion that social support is cardio-protective. Of the four conditions, those receiving social support showed the greatest amount of cardiovascular recovery following an emotional stressor. This shows one mechanism whereby support can lead to long-term cardiovascular health; namely, through expediting cardiovascular recovery following a stressor. As recovery has been shown to be a powerful predictor of cardiovascular disease, this is an important role for social support.

While males may use support significantly less than women, these data show that, when emotional support is freely given, males benefit from it physiologically as much as females do. Emotional support was found to produce the greatest cardiovascular recovery following a stressor for both males and females. Again this fits into the current literature, which shows a positive relationship between support receipt and long-term health for men (Taylor et al., 2003). This supports the notion that males seek support less because they believe they will not receive the help they are looking for, and not because the support itself is ineffective.

Surprisingly, the data also showed that the most effective source of emotional support for men was other men. While men in the social distraction condition showed

lower blood pressure if they had been distracted by a female, those in the social support condition showed greatest recovery if they received support from males. The opposite was true for females, suggesting the most effective support may come from another member of one's own gender.

Like in Study 3, this could be partially due to the nature of the task. After having performed poorly on a math task, in which some may expect males to outperform women, it could have been most beneficial for men to know that another male had also performed poorly. In this case receiving empathy from a male may have assured the participant that his performance was due to the unreasonable nature of the task, and not to his low abilities. That this effect may have been due to the task does not, however, imply that it is not generalizable; it is likely that a good portion of the stressful situations men face are similarly gender specific, such as certain work tasks or stressors inherent to the male role. In this way, the task used here may capture the nature of some real-world stressors, and how men respond to support from men and women in those situations. It would be useful for future studies to examine whether gender of support givers is also influential in gender-neutral tasks, or whether men and women in these situations respond equally to male and female supporters.

Also unexpected were the results of the social distraction condition. Social distraction was a relatively effective aid in recovery for women. It seemed that women benefited from social interaction in general following the stressor, even if the topic of conversation was not emotional support. It has been hypothesized that stress increases women's desire to befriend others (Taylor et al., 2000), thus having a friendly conversation with another person after stress could be calming. Men showed no such

benefits from having friendly, casual conversation; men being distracted by confederates had high blood pressure both during the recovery and rumination periods. In this case it seems that attempts by social others to distract men following a stressor were more harmful than helpful.

Notably, patterns of cardiovascular reactivity during the recovery phase, when participants were actually engaged in support, distraction, etc., did not remain the same during the rumination phase, when subjects were left to think alone. That is, blood pressure while engaging in different coping mechanisms did not necessarily predict how effective they would be in inducing recovery by the end of the study. Those receiving emotional support did not show the lowest blood pressure while receiving it; in fact those receiving emotional support had the highest blood pressure during the recovery period. This emphasizes a potential cost of social support. Like rumination, the actual process of dwelling on the stressor can be uncomfortable. However, unlike rumination, those receiving support show recovery after receiving it. Dwelling on a stressor socially may lead to reassurance, empathy, reappraisal, and other benefits that do not appear to come with ruminating alone. The physiological benefits of these social processes, however, seem to manifest themselves after the process, rather than during.

This was also shown in participants' self-reported anger during the rumination period. Those who ruminated alone reported being angriest – significantly more so than all the other conditions. Paralleling this, those who had ruminated alone had the highest blood pressure by the end of the study. Indulging in these angry thoughts after a stressor could be particularly costly for health, as studies show that angry rumination is associated with increased cardiovascular morbidity and mortality (Larsen & Christenfeld, 2009).

Preventing angry rumination, then, may be a key role of social support in protecting cardiovascular health.

Like in Study 3, the data showed no effect of support receipt on self-efficacy, even when support and efficacy measures were task-specific. The main difference that emerged in the self-efficacy measure was in the blood pressure of men and women who chose high or low self-efficacy tasks. While there was no overall gender difference in choice of task, men who chose to do the math task were those who showed greater reactivity both during the stressor itself and immediately prior to choosing the task, while females were exactly the opposite. It seems that for men, those who were most stressed or upset about the task were the ones who wanted another chance to prove their skill in that area. For females, however, those who were most upset or stressed chose to avoid the task in the future.

This need to prove themselves after failure could speak to why males are reluctant to seek support, particularly with tasks related to gender roles. Paralleling this, Wallston (1976) showed that men with high self-esteem and more traditional gender views ask for help less often on tasks more central to male gender roles than on tasks peripheral to gender, while men with more feminist beliefs asked for help equally across task types. For females, however, success on the current task may not have been important to gender identity or self-esteem, and therefore those who were most distressed by the task saw no good reason to do something similar a second time.

While these data support the notion that men use support from females because it appears to be more readily available and not because it is actually more effective, it should be noted that the support provided by men in this study was scripted rather than

naturally occurring. It is possible that the support men naturally provide would in fact be less effective – perhaps men would not be so ready to admit to other men that they also failed at a difficult task. These data do indicate, however, that receiving emotional support from another man has no added physiological or affective costs compared to receiving support from a woman. It would be useful for future research to explore the content of support provided by men and women in similar situations, and whether the support men choose to give other men actually is less beneficial than that from women. For now, however, these data suggest that if men used support to a similar degree as women, they could reap many short and long term benefits.

Chapter 4, in part, is being prepared for submission for publication of the material. Larsen, B.; Christenfeld, N. The dissertation author was the primary investigator and author of the material.

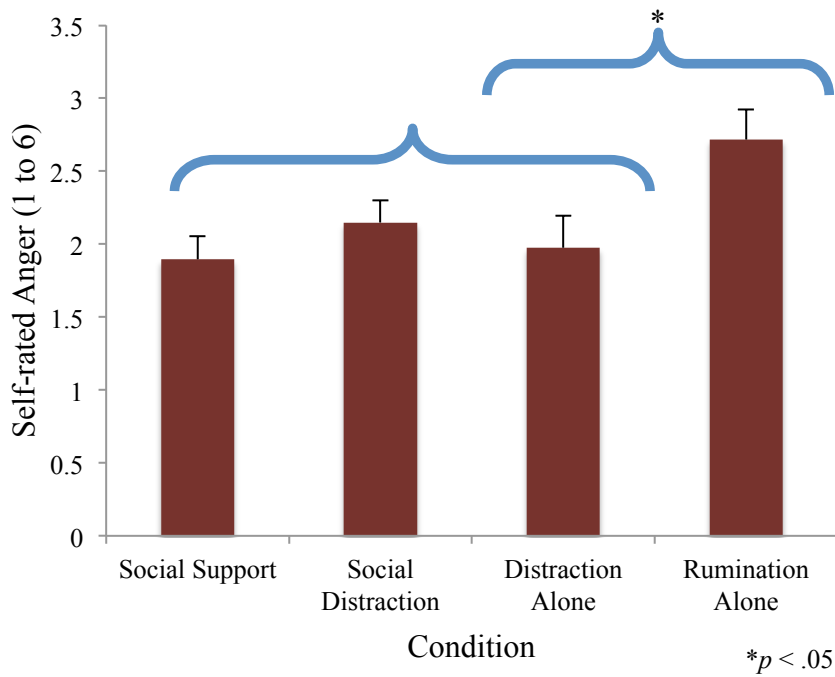


Figure 4.1. Participants' self-rated anger during the rumination period (scale of 1, *not at all angry*, to 6, *extremely angry*).

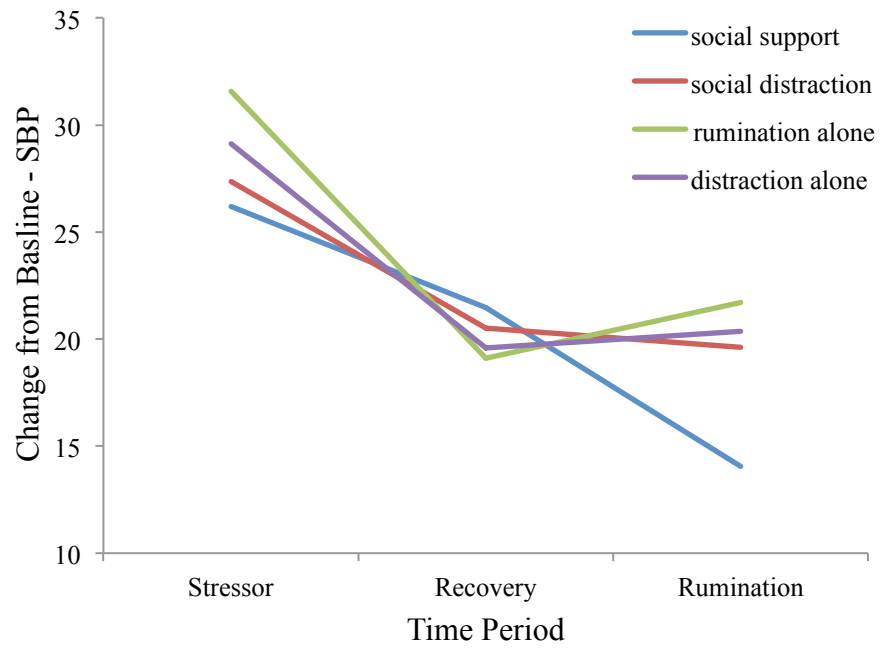


Figure 4.2. Change in systolic blood pressure (SBP) during the stressor, recovery, and rumination periods, divided by condition. Time x condition interaction is significant at the $p < .01$ level.

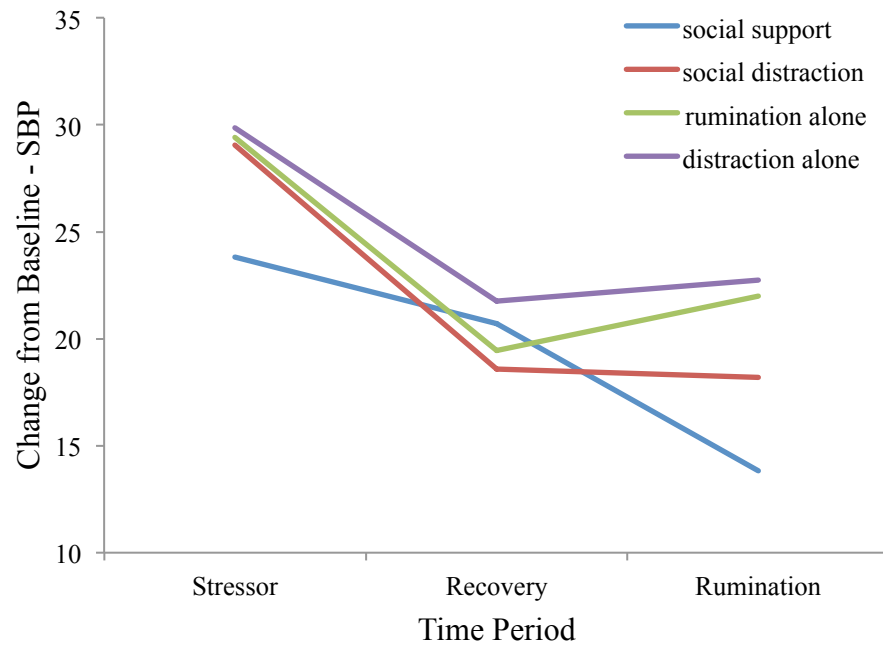


Figure 4.3a. Change in systolic blood pressure (SBP) for female subjects during the stressor, recovery, and rumination periods, divided by condition.

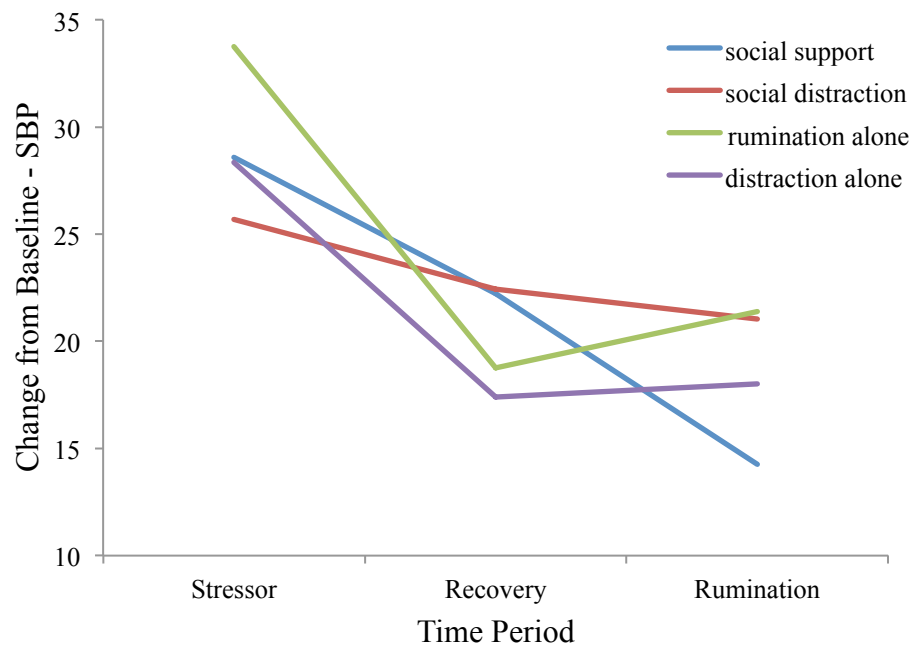


Figure 4.3b. Change in systolic blood pressure (SBP) for male subjects during the stressor, recovery, and rumination periods, divided by condition.

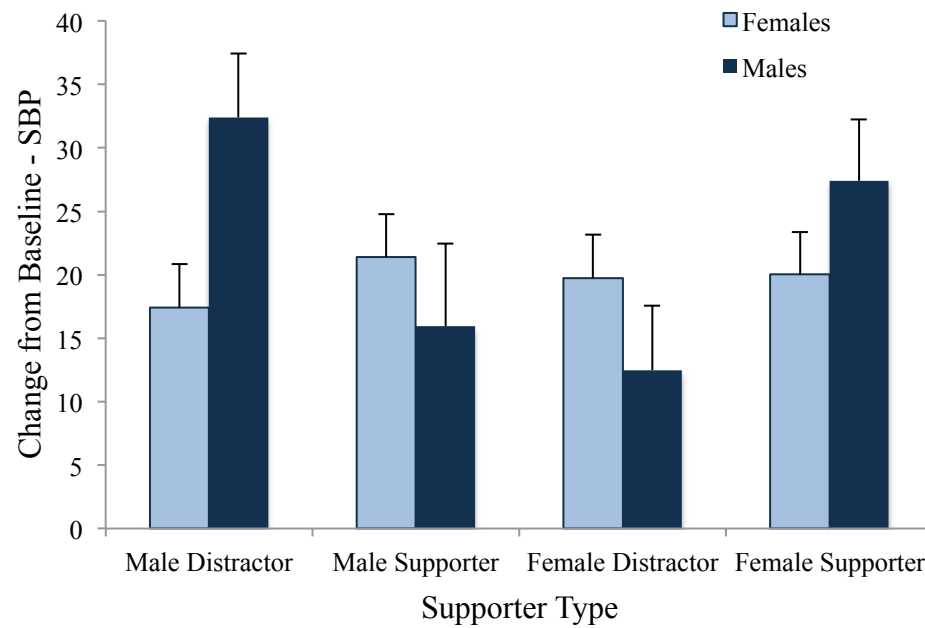


Figure 4.4. Change in systolic blood pressure (SBP) from baseline during the recovery period for male and female participants, divided by support type (distraction/support) and confederate gender. Condition x confederate gender x participant gender interaction is significant at the $p < .01$ level.

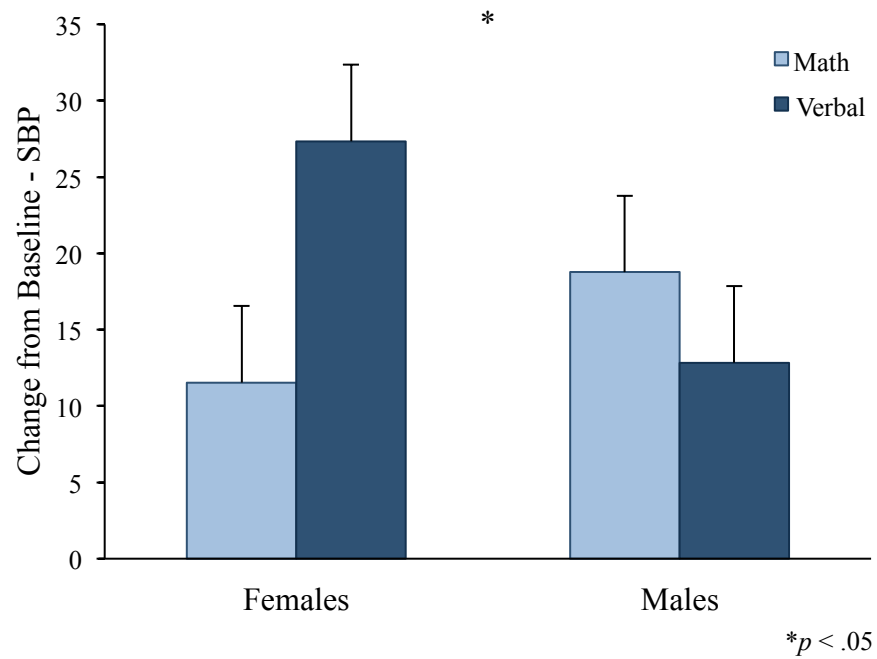


Figure 4.5. Change in systolic blood pressure (SBP) from baseline during the rumination period for those who chose either the math task or verbal task immediately after, divided by gender.

General Discussion

This body of work supports the theory that social support influences cognitive processes associated with stress, and that it does so differently for men and women. Moreover, these studies emphasize how differently men and women think about social support itself, and not just how they think about stressors when support is available. Chapter 1 showed that social support did not influence primary stress appraisal, but that, for both men and women, it greatly influenced secondary appraisal by increasing the number of resources men and women felt were available to them to address the situation. This is the first study to show empirically that perceptions of available resources for a given situation depend largely on whether or not social support is present. This also emphasized the importance of support proximity; participants were much more likely to consider resources as available when social others were already present.

This first study also showed the emergence of gender patterns that persisted across studies; namely, that females were essentially unaffected by the gender of support givers, while males were greatly partial towards females. Males perceived having more resources available when females were present compared to when males were present, and, given the same stressor and the same support available, males asked females for help more than they asked males. In fact, when females were present, hypothetically or in reality, as friends or strangers, males' help seeking was essentially identical to that of females.

The data suggest that this difference in help seeking is mainly due to differences in perceived availability, or the willingness of social others to provide assistance. Data from chapter 1 suggest that men may feel resources from females are not simply more

available but are more useful, since the largest differences emerged when they were asked which resources would “best help” them address the situation. However, even when the question emphasized helpfulness, it was clear that availability was also factored in since friends who were present were judged to provide more helpful resources than friends who were not. Money from male friends or female friends should not be any different, yet men judged resources from female friends to be more helpful in a financial strain than those from male friends. This difference in perceived availability was emphasized by Study 2b, in which men revealed a belief that, should they ask for help from a male or female, females would be more likely to provide it.

Data from chapters 2 and 3 also emphasize that males’ preference for female helpers is due largely to perceived barriers in obtaining support, and not simply to the perceived quality of support itself. In tasks where men and women should have equal abilities (such as handing the participant a pen, listing animals, or telling the experimenter that the participant’s map was unreadable), men’s preference for female support emerged only in the case of asking for help. It is unlikely that another man would decline a request to hand the subject a pen, but it is perhaps less likely that the subject believed other men were less capable of doing so than women were. It seems that quality of help is influential in accepting help, since men actually accepted help more from other men in the spatial reasoning task, but that willingness of the helper is most influential when actively seeking help.

Chapter 4 showed that even for emotional support, a preference for female support is not necessarily based on seeking more effective support. For men who had failed a somewhat male-oriented task, the most effective support was emotional support

from other men – more so than emotional support from women or distraction from either gender. This was also more effective than ruminating or being distracted alone, emphasizing again that males benefit from support even if they do not always use it. Men disclosing more often to women than men, then, could be due to a misperception that it is more effective, or a perception that it is simply more available.

It remains to be seen if males and females' perceptions of availability are in fact accurate. Again, it is unlikely that a male subject would have declined to give another male subject any of the help they requested in the given studies, but it is possible that in the world outside the laboratory men would meet more opposition when requesting help from other men. In a society that emphasizes chivalry, there is an expectation that men will help women in need, from opening doors to changing tires, yet there is no such expectation for responding to men needing help. Women, on the other hand, are more empathetic (Trobst, Collins, & Embree, 1994) and more reactive when others are in distress (Eisenberg et al., 1991), and give more help overall than men do (Belle, 1987; Copeland & Hess, 1995). It is possible, then, that females would in fact be more likely to give requested help to a man, or to freely offer help to a man who seemed in need, than other men would be.

These studies showed surprisingly few gender differences in the perceived costs of receiving support. Men and women in Study 2b showed no difference in perceptions of how embarrassing or awkward it would be to ask for help or how this would influence perceived control. These variables were also not influenced by the gender of the person being asked for help. General self-efficacy and locus of control were not changed by accepting help in Study 3, and task-specific self-efficacy was not changed by receiving

support in Study 4. Furthermore, men and women in Study 2b suggested they would not think any better or worse of someone who asked for help in the described situation, regardless of their gender.

The lack of gender differences in perceived costs is surprising, as it defies prevailing theories that men do not seek help because of ego costs due to gender role conflict (Brannon & Davis, 1976; Addis & Mahalik, 2003; Good, Dell, & Mintz, 1989). It is likely that not all situations are alike in the costs incurred in asking for help. Asking someone to help you with a simple everyday task may not be comparable in awkwardness or embarrassment to seeking psychological counseling. More research is needed to determine how perceived costs may differ between informal and formal help seeking, and how gender interacts with these perceived costs.

It is also that these costs are not perceived by men in general but only by those endorsing traditional gender roles. There is a good deal of literature supporting this notion. Males endorsing more traditional masculine roles have more negative views of psychological help seeking (Robertson & Fitzgerald, 1992; Good et al., 1989). Conversely, men with more liberal feminist views are more likely to express positive views towards psychological help seeking (Zeldow & Greenberg, 1979), and are more likely to request help on masculine-type tasks than men with more traditional views (Wallston, 1976). It is likely that those endorsing the importance of independence, toughness, and emotional control for men would perceive more costs in seeking help. It appears that in our samples, however, there were not enough men endorsing these views to produce an overall gender effect. More research is needed to determine how traditional

views of masculinity influence both the perceived costs and perceived benefits of help seeking.

A negative view of help seeking could be putting men with traditional gender views at risk. Detriments in health and wellbeing have been found in men endorsing traditional gender roles (Courtenay, 2000), and role socialization was found to predict greater mortality in men (Harrison, 1978). In fact, in a sample hospitalized for myocardial infarction (MI), extreme masculinity was found to predict severity of MI (Helgeson, 1990) and greater post-MI chest pain (Helgeson, 1991), even after controlling for common risk factors and other personality traits (such as Type A). An examination of psychological factors common to people suffering from coronary heart disease revealed the high prevalence of traits such as inhibiting emotional expression, lacking empathy, and fear of homosexuality (List, 1967) – all traits that greatly overlap with a traditional view of masculinity (Helgeson, 1991). As lack of social support has been found to predict similar health problems (House et al., 1988; Berkman et al., 1992), it is possible that a lack of social support use could mediate this relationship between traditional masculinity and poor health.

This is an important path for future research to explore. Men in this country die much earlier than women do (Waldron, 1976), the reasons for which are not entirely clear. Before age 70, cardiovascular disease prevalence is almost double in men than women (Kannel, Hjortland, McNamara, & Gordon, 1976), a phenomenon which cannot be fully accounted for by controlling for common risk factors (Johnson, 1977). It has been suggested that use of social support could help explain this imbalance (Helgeson, 1991). Data from the studies in this dissertation, and a myriad of research in the literature,

show that men do in fact benefit from support when they receive it, both in the short and long run, thus it is possible that shying away from this resource is indeed contributing to their morbidity and mortality.

Data presented here show that social support can in fact increase perceptions of resources available to deal with stress, and that receiving help can expedite recovery following stress. For men, however, the full realization of these benefits is impeded when support must be sought out. More research is clearly needed to investigate how to best overcome barriers to support use in men, the accomplishment of which has the potential to enhance mental and physical health in profound ways.

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