DIFFERENCES IN DEPRESSION AS A FUNCTION OF GENDER,

ROLES, AND RUMINATION

Peggilee Wupperman, B.S.

Thesis Prepared for the Degree of

MASTER OF SCIENCE

UNIVERSITY OF NORTH TEXAS

December 2003

APPROVED:

Craig S. Neumann, Major Professor
Sharon Rae Jenkins, Committee Member
Patricia Kaminski, Committee Member
Kenneth W. Sewell, Coordinator of the Program in
      Clinical Psychology
Linda Marshall, Chair of the Department of
      Psychology
Sandra L. Terrell, Interim Dean of the Robert B.
      Toulouse School of Graduate Studies

Wupperman, Peggilee, *Differences in Depressive Symptoms as a Function of Gender, Roles, and Rumination*. Master of Science (Psychology), December 2003, 65 pp., 7 tables, 6 illustrations, references, 90 titles.

Research indicates that women are more likely to experience depression than are men. The current study examined the effects of gender, socialized gender roles, rumination, and neuroticism on symptoms of depression in young adults. As predicted, rumination mediated the relationship between gender and depression, and socialized gender roles had a greater explanatory power for rumination, neuroticism, and depression than did gender. Contrary to predictions, rumination did not mediate neuroticism's effects on depression. Structural equation modeling reveled that rumination-on-sadness positively predicted neuroticism and depression. However, rumination-in-general, while positively predicting neuroticism, negatively predicted symptoms of depression. Finally, once socialized gender roles, rumination, and neuroticism were controlled, male gender was modestly predictive of depression.

TABLE OF CONTENTS

LIST OF TABLES

LIST OF ILLUSTRATIONS

INTRODUCTION

Women are at least 1.5 times as likely as men to be diagnosed with a depressive disorder (Kessler et al., 1994; McGrath, Keita, Strickland, & Russo, 1991) and at least twice as likely to report symptoms of depression in self-report measures (Nolen-Hoeksema, 1987). Women also experience longer episodes of depression than do men. A prominent factor in this difference is a gender difference in response styles to depressive symptoms (Butler & Nolen-Hoeksema, 1994; Nolen-Hoeksema, 1987).

Response Styles

Studies show that women are more likely than men to engage in ruminative, passive responses to negative events and depressive symptoms (Butler & Nolen-Hoeksema, 1994; Muday, McNall, & Wong, 1997). Although some studies show that men are more likely than women to engage in distractive responses to depressive symptoms (Butler & Nolen-Hoeksema), numerous other studies show that both genders are equally likely to engage in distraction (Nolen-Hoeksema, Morrow, & Fredrickson, 1993; Straus, Schwartz & Koenig, 1996). Ruminative responses to depressive symptoms consist of persistent thoughts that focus attention on symptoms and the possible causes of those symptoms. These thoughts are not goal directed and do not lead to plans for the remedial action of alleviating symptoms or causes of depression (Conway, Csank, Holm, & Blake, 2000, Just & Alloy, 1997; Nolen-Hoeksema, 1991; Nolen-Hoeksema & Morrow, 1991; Nolen-Hoeksema, Morrow, & Fredrickson, 1993).

Substantial research shows that individuals who ruminate in response to negative emotions experience more depressive symptoms, more depressive incidences, greater risk for future depressive episodes, and longer durations of depression (Conway et al., 2000; Just & Alloy, 1997; Nolen-Hoeksema & Morrow, 1991; Nolen-Hoeksema et al., 1993). Nolen-Hoeksema

(1987) theorizes that rumination on negative emotions affects depressive mood by three mechanisms: (1) It interferes with attention and concentration, which may lead to increased failures and a greater sense of helplessness; (2) it enhances recall of negative events; (3) and it increases the likelihood of using depressogenic explanations for negative life events.

Other researchers have found support for a connection between attention and negative affect (Wallace & Newman, 1998; for lit review, see Wallace & Newman 1997). Wallace and Newman point out that maladaptive thoughts contribute to negative affective reactions, and that the evaluation and regulation of maladaptive thoughts is often accomplished through controlled information processing. However, controlled processing requires that adequate attentional resources be available. Therefore, if attention is automatically diverted elsewhere, controlled self-regulatory processes – and the capability to evaluate and alter maladaptive thoughts - will be impaired. Maladaptive affect and behavioral responses will thus become more likely. Therefore, because rumination diverts attention that might be used to regulate thoughts about depressive feelings, the likelihood that these depressive thoughts will be evaluated and altered is decreased.

Using a multiple regression approach, studies have shown that once the effects of response styles to depressive symptoms are taken into account, gender differences in depression are no longer significant (Nolen-Hoeksema et al., 1993). Other studies have found that ruminative response predicts duration of depression even when initial severity of depression is controlled (Butler, & Nolen-Hoeksema, 1994; Nolan, Roberts, & Gotlib, 1998).

Thus, this response-style theory may partially explain why women are more likely to suffer from depressive symptoms. However, the question of how these different response styles are developed has not yet been adequately explored.

Socialized Gender Roles

Some theorize that socialization to conform to gender-role stereotypes might play a part in the development of response styles. Many stereotypic male social roles emphasize instrumental qualities such as confidence, persistence, and competence – characteristics that are inconsistent with a passive, ruminative response. Conversely, many stereotypic female social roles emphasize qualities involving a lack of instrumentality, such as dependence and passivity – characteristics that are consistent with a passive, ruminative response (Ruble, Greulich, Pomerantz, & Gochberg, 1993). According to social role theory, these gender stereotypes originate from the widespread association of women with domestic roles and men with provider roles (Eagly, 1997; Eagly & Steffan, 1984). Consistently, study participants judged individuals in domestic roles as more communal and less agentic than individuals who were employed – regardless of the individuals' gender (Eagly & Steffen, 1984, 1986). However, when individuals' occupations were not mentioned, women were perceived as more communal and less agentic than men.

Moreover, these stereotypes of men being more instrumental and agentic than women are already well known by children in early elementary school (Ruble et al., 1993). To the degree that these stereotypical beliefs are integrated into an individual's self image, socialized feminine gender-role beliefs (or a lack of socialized masculine gender-role beliefs) could increase vulnerability for rumination and depressive symptoms regardless of biological sex.

Congruent with this explanation, other investigators (Brody & Hall, 1993; Nolen-Hoeksema, 1987) have speculated that gender differences in ruminative responses may result from stereotypes that males are active and tend to try to alleviate emotions such as sadness, whereas females are thought to be more expressive of sadness. Most boys grow up being told to "act like a man" and "be strong." Although girls may not be encouraged to display or focus on emotion,

they may also not be encouraged toward the use of instrumental responses to negative events as often as are boys, which may leave girls more vulnerable to ruminative responses (Nolen-Hoeksema, 1993).

It is important to note that rumination is not the same as self-reflection or self awareness (Nolen-Hoeksema, 1993; Trappnell & Campbell, 1999). Rumination is characterized by persistent self-attention in response to depressive symptoms, anxiety, or perceived threats or losses. Conversely, self-reflection is characterized by self-attention motivated by curiosity or a desire for further awareness. This is consistent with findings that rumination is associated with neuroticism, whereas self-reflection is associated with openness to new experience and self knowledge (Trapnell & Campbell).

In contrast to masculine stereotypes, several popular feminine stereotypes involve the experience and expression of negative emotions. In a review of the literature on gender-role stereotypes and emotion, Brody and Hall (1993) found that women are thought to be more expressive of sadness and fear than are men. Birnbaum (1983) found that even preschoolers believe that girls are more likely than boys to feel sad. It is important to note that men and women may also experience different stressors, which may lead to differences in coping styles and affect. For example, women report experiencing more negative life events and chronic daily stressors than do men (for review, see Brems 1995; McGrath, Keita, Strickland, & Russo, 1990). Thus, the belief that women are more expressive of sadness and fear may occur partially because women have more things *about* which to be sad or afraid. However, some research suggests that the stereotypes themselves may become self-fulfilling prophecies (Brody & Hall; Grossman & Wood, 1993). For example, in a study that reminded participants of beliefs about females' greater emotionality, females reported greater emotional intensity than did males. The extent to

4

which females endorsed gender stereotypes was correlated with reported emotional intensity. However, when a second study led participants to expect that males and females would experience comparable emotions, no gender differences were found in self-reported emotions (Grossman & Wood).

Several studies have shown that identification with socialized masculine traits, commonly defined as instrumentality or agency (Spence, Helmreich, & Strapp, 1974), is negatively correlated with depression in both men and women (McGrath et al., 1991; Petersen, Sarigiani, & Kennedy, 1991). This negative relationship between socialized masculinity and depression has also been found in children and adolescents (Allgood-Merten, Lewinsohn, & Hops, 1990; Craighead & Green, 1989). In fact, studies have shown that level of socialized masculinity is a better predictor of depressive symptomology in adolescents than several other variables and appears to explain a substantial amount of the gender difference in depression (Allgood-Merten et al.; Petersen et al.). In contrast, when hormonal levels were measured in male and female adolescents, no relationship was found between depression and hormonal levels or hormonal changes (Eccles et al., 1988).

However, although extensive research has focused on the relationship between socialized gender roles and depression, few studies have examined gender roles and rumination together. One study on responses to sadness found that participants high in socialized femininity (and low in masculinity) were more likely to ruminate, whereas participants high in socialized masculinity were more likely to engage in distracting behaviors (Conway, Giannopoulos, and Stiefenhofer, 1990). However, rumination was assessed with a three-item measure which included questions that may have assessed constructs other than rumination (eg., "I get together with one very close person or friend," and "I talk to others about my feelings"). Therefore, the results remain

questionable in terms of how the combination of gender roles and rumination may influence depressive symptoms.

In another study of the effect of socialized gender roles on self-focused responses to negative situations, researchers found that participants' gender roles predicted whether or not they focused on themselves and their emotions after a negative event (Ingram, Cruet, Johnson, & Wisnicki, 1988). Participants high in socialized femininity (and low in masculinity) were more likely to focus on themselves and their emotions than participants low in femininity, regardless of the gender of the participant.

Perhaps individuals low on socialized masculinity (i.e., few instrumental and agentic traits) have (or feel they have) fewer active coping resources (Nolen-Hoeksema, 1993). As a consequence, such individuals may ruminate about why they are feeling the way they are. In contrast, individuals high on socialized masculinity may believe that they are able to take active problem-solving measures to combat depressive feelings or distract themselves from their mood using everyday instrumental behaviors (e.g., using work or exercise as a distracter). Therefore, rumination may mediate the relationship between socialized gender roles and depression.

Gender Roles, Rumination, and Neuroticism

Rumination is also correlated with neuroticism (e.g., general negative affect and reactivity; Eysenck & Eysenck, 1985), and the latter construct has been widely reported to be a trait that increases vulnerability for depression (e.g., Berlanga, Heinze, Torres, Apiquian, & Caballero, 1999; Duggan, Lee, and Murray, 1990; Jorm, 1987; Roberts, Gilboa, & Gotlib, 1998; Wallace & Neuman, 1997). In a study of depressed inpatients, Duggan, Lee, and Murray (1990) found that elevated neuroticism scores were associated with both duration of depression and poor outcome over an 18-year period. A longitudinal study of college students found that, although a history of

depression was associated with increased levels of neuroticism and rumination, it was the neuroticism and rumination – not the history of depression – that led to subsequent increased depressive symptoms (Nolen et al., 1998).

As such, ruminative response style may partially mediate the effect of neuroticism on depression (Nolen et al., 1998). This finding is consistent with the theory that neuroticism does not lead to depression through a direct route, but instead leads to depression through cognitions, specifically through ruminative response style (Nolen et al.). Other investigators, such as Roberts and colleagues (1998), have suggested that rumination may reflect a cognitive manifestation of neuroticism.

Conversely, levels of neuroticism, or reactivity to negative affect, may also be increased by rumination. Just as rumination has been shown to increase and intensify depressive symptoms (Conway et al., 2000; Just & Alloy, 1997; Nolen-Hoeksema, 1991; Nolen-Hoeksema & Morrow, 1991), rumination may also increase reactivity to negative stimuli. This is consistent with a longitudinal study which found that rumination predicted not only increased depression, but also increased levels of anxiety and negative attributions. These findings lead the authors to suggest that rumination may be a vulnerability factor for general negative affectivity (Schwartz & Koenig, 1999).

Just as women report greater levels of depressive symptoms that do men, they also tend to score higher than men on neuroticism scales (Jorm, 1987). However, research also shows that participants who score high in socialized femininity and low in masculinity tend to score high on neuroticism scales – regardless of the participant's gender (Shevlin, Baily, & Anderson, 2002). In fact, gender role had greater explanatory power than actual gender, suggesting that differences between men and women in neuroticism may be a function of socially learned behavior (gender

roles) rather than inherent gender differences. Furthermore, Nolen and colleagues (1998) found that gender did not moderate the relationships among rumination, neuroticism, and depression. Thus, although women are more likely to ruminate than are men, once ruminative behavior commences, the depressive effects are the same, regardless of gender.

Gender Roles, Rumination, and Women's Beliefs about Depression

Another possible factor in women's greater tendency to ruminate may be the popular beliefs and expectations about women's proneness to depression, including beliefs that women have fundamental vulnerabilities in their personality (e.g., women are inherently needy) or weaknesses in biology (e.g., female hormones cause depression).

Nolen-Hoeksema and Morrow's (1988) survey study of 65 women and 83 men found support for the theory that women have different beliefs about the cause and controllability of depression than do men. Researchers asked participants to rate how strongly they agreed with eight statements about the causes of depression. Women agreed significantly more strongly than men with statements that said depression was often uncontrollable and was caused by biology. Although research indicates that women may experience more uncontrollable stressors than do men (Brems, 1995; Nolen-Hoeksema, Grayson, & Larson, 1999), the additional belief that one's biology predisposes one to depression might increase depression vulnerability.

Such attributions for depression might lead a woman to expect that any depressive symptoms are caused by her biology and are therefore beyond her ability to control. Thus, a depressed woman might believe that depressive symptoms cannot be relieved through instrumental or agentic behaviors, and she might therefore not attempt to mediate her mood. This pattern is consistent with Seligman's (1975) theory of learned helplessness. He argues that depression can result from feelings that one has no control over the outcome of a situation. In the

absence of control, one may feel helpless and quit attempting to affect the situation, reasoning that one's actions have no impact anyway. Similarly, a woman who believes that depressive symptoms are beyond her control may fail to take instrumental action to mediate her depression, and instead may ruminate on features of her character or biology that she feels are causing her to be depressed. As rumination has been shown to increase severity and duration of depressive symptoms, beliefs that females are prone to depression may become a self-fulfilling prophecy.

Thus, research is needed on the possible link between gender-typed beliefs about depression and rumination. In addition, a woman's belief that she is biologically prone to depression might also interact with stereotypical femininity, or lack of masculinity, to further increase the likelihood of a ruminating response style to depressive symptoms. A woman already low in instrumental behaviors may be less likely than other women to take action to challenge the belief that her biological destiny is to experience depressive symptoms. However, up to this point, little-to-no research has examined the relationship between gender roles, gender-specific beliefs about depression, and rumination.

Gender Roles, Rumination, and Alcohol

Finally, some investigators have suggested that men's tendency to engage in distracting as opposed to ruminative responses to depressed moods might be manifest in harmful behaviors such as alcohol abuse. This theory seems to be supported by the fact that the rate of alcoholism is twice as high for men as it is for women (Williams & Spitzer, 1983). In addition, the consumption of alcohol to cope with depressive symptoms seems to increase the chances of subsequent alcohol abuse (Cooper, Russell, & George, 1988).

However, some studies have shown that men who distract from depressive symptoms do not tend to engage in maladaptive behavior (Nolen-Hoeksema, 1993; Nolen-Hoeksema & Morrow,

1991). Instead, men with *ruminative* responses are the ones more likely to engage in alcohol use, possibly to try to stop their ruminating. This finding is consistent with previous results showing that high neuroticism predicts increased alcohol use, and that coping motives partially mediate the relationship between high neuroticism and drinking problems (Stewart, Loughlin, & Rhyno, 2001). Furthermore, as neuroticism and rumination are both positively correlated with alcohol use, it is not surprising that instrumentality has been shown to be negatively correlated with alcohol abuse in both males and females (Huselid & Cooper, 1992; Snell, Sharyn, & Hawkins, 1987).

However, although depression is associated with higher rates of alcohol abuse in both genders, the prevalence of depression is significantly higher among females who abuse alcohol than among males who abuse alcohol (Kessler, Crum, Warmer, Nelson, Schulenberg, & Anthony, 1997). Clearly, further research is needed to examine the relationship between gender, gender roles, neuroticism, rumination, depression, and alcohol abuse, and to understand how this relationship differs between the genders.

Current Study

The primary purpose of this study was to explore the relationships between gender, socialized gender roles, rumination, neuroticism, and depression in a large sample of young adults. The model shown in Fig. 1 is a conceptual model of these relationships. Based on the literature reviewed above, the model specified that the rumination construct would play a pivotal role in mediating the effects of gender and socialized gender role on depression. Structural equation modeling was one way this model was tested.

A limitation of the previous research on depression, socialized gender roles, and rumination concerns the statistical approach used to examine the associations between these constructs. To

the extent that previous studies relied upon analysis of observed data without accounting for error of measurement, the results of such studies are at best biased estimates of the particular associations. As such, a more sophisticated data analytic approach was considered helpful in elucidating the relationships among these constructs.

Latent variable confirmatory factor analysis (CFA) and structural equation modeling (SEM) are some of the best statistical approaches for modeling theoretical constructs (e.g., depression, gender role, rumination) and the relationships among such constructs (Bentler, 1995; Dunn, Everett, & Pickels, 1993; Hershberger, 1999; Hoyle, 1995; Reise, 1995). This multivariate approach allows investigators to examine whether a set of observed or manifest variables (MVs) are valid indicators of specific hypothetical constructs or latent variables (LVs). A specific LV (e.g., depression) is hypothesized to be responsible for generating the correlations among a set of MVs (e.g., CES-D items). The value of LV models is that they represent the common factor variance in a set of MVs separately from their unique plus error variance (Bentler, 1980). On the other hand, MV models are not as reliable because their theoretical effects are estimated in a more biased manner. Specifically, the absolute size of a correlation coefficient is strongly influenced by the level of measurement error for each MV. Since LV models represent the common variance among two or more MVs, they can evaluate the cross-set correlations between factors (depression and rumination) in a less-biased manner because the factor correlations have been freed from the unique (plus error) variance. As such, CFA provides precise parameter estimates adjusted for measurement error (Bentler, 1980, 1995). Of course, it is important to note that some form of "thingness" cannot be attributed to a particular LV, since an LV is a mathematical and theoretical construct (Bentler, 1980). Nonetheless, LVs are often quite useful for representing the supposed theoretical system in a set of correlated MVs.

Another advantage of a latent variable approach is that hypothesized models can be directly tested for their goodness of fit to the observed data. In conducting CFA, investigators must explicitly specify the number of factors, the variable-to-factor relationships, and the factor-to-factor relationships within a model (along with other variance and covariance parameters). Then one must statistically test the adequacy of the model in terms of strict model fit criteria (Bentler, 1995). Two kinds of fit indices are regularly recommended, absolute and relative fit indices (Hu & Bentler, 1999). An absolute index gauges how well the model reproduces the observed data, and thus smaller values are better; while relative indices gauge the fit of the hypothesized model with respect to a less sophisticated null model, and larger values indicate better fit of the hypothesized model. Extensive research by Hu and Bentler (1999) has shown that the standardized root mean square residual (SRMR) index and the comparative fit index (CFI), respectively, are preferred indices for assessing absolute and relative model fit. Good fit is evident when the SRMR value is .08 or below and the CFI value is approximately .94 or above.

Besides use of a sophisticated data analytic approach, the study also addressed an important methodological concern. Specifically, most previous studies on gender differences in depression have used the Ruminative Response scale of the Response Styles Questionnaire (RRRSQ; Nolen-Hoeksema & Morrow, 1991). Findings based on the RRRSQ, however, can be questioned because the scale has since been shown to measure multiple factors, including automatic negative thoughts (Conway et al., 2000). In fact, the RRRSQ has been shown to overlap with the Automatic Thoughts Questionnaire (ATQ), which is especially problematic in that parallel effects have been found in studies based on either of the two measures. Furthermore, some researchers question whether some items on the RRRSQ actually measure depression as well as rumination, thus explaining the RRRSQ's predictive effects on depression (Stanton, Danoff-

12

Burg, Cameron, & Ellis, 1994; Treynor, Gonzalez, & Nolen-Hoeksema, 2003). Therefore, a different and more precise measure of rumination was relied upon to further ascertain rumination's specific effects on gender differences in depression.

The Rumination-on-Sadness Scale (RSS; Conway et al., 2000) has been shown to have high reliability, convergent validity, and discriminant validity. Furthermore, a principle component analysis indicated that all 13 items of the RSS seem to reflect a unidimensional construct - rumination-on-sadness (Conway et al.). Therefore, this study first utilized the RSS to determine whether rumination continued to mediate gender differences in depression when a purer measure of rumination was used. To determine whether gender differences in depression were also mediated by rumination-in-general, as opposed to rumination specifically on sadness, the current study included the rumination subscale of the Rumination-Reflection Questionnaire, which measures a general tendency to ruminate (RRQ; Trapnell & Campbell, 1999).

The current study examined the predictive effects of gender, socialized gender role, neuroticism, and rumination on symptoms of depression via traditional hierarchical multiple regression. Next, using confirmatory factor analysis (CFA) and structural equation modeling (SEM), models of the relationship between gender, gender role, rumination, neuroticism, and depression were tested. Finally, using the gender samples separately, this study assessed whether the relationships among the latent variables were different between the genders, or whether, as has been previously found in the rumination/depression process, the relationships were similar.

METHODS

Participants

The current study recruited 590 undergraduate students from introductory psychology, sociology, and biology courses at the University of North Texas in Denton. Thus, with 590 participants, a sufficient subject-to-variable ratio existed for conducting multiple regression and structural equation modeling. The sample was 36% men (n = 211) and 64% women (n = 378). Of the participants, 66% were European American, 13% were African American, 11% were Hispanic, and 8% endorsed "other." Each participant earned one extra-credit point in exchange for participation. This study was approved by the UNT IRB. Participants were treated in accordance with the ethical principles of the American Psychological Association (APA).

Materials

Rumination in Response To Depressive Symptoms

The Rumination-on-Sadness Scale (RSS; Conway et al., 2000) was used to assess the way participants usually respond to their symptoms of depressed mood. The RSS consists of 13 items that assess responses to depressed mood and are focused on the self and emotions. Items are preceded by the stem: "When I am sad, down, or feel blue …." Respondents indicate the extent to which each item reflects their responses to sadness on a five-point Likert-type scale ranging from 1 (not at all) to 5 (very much). Items used to measure ruminative responses include: "I get the feeling that if I think long enough about my sadness I will find that it has some deeper meaning and that I will be able to understand myself better because of it," and "I lie in bed and keep thinking about my lack of motivation and wonder about whether it will ever return." The RSS has been shown to have high internal consistency reliability (Cronbach's alpha = .91),

14

convergent validity, and discriminant validity in undergraduate college students (Conway et al., 2000).

Self-Rumination in General

The Rumination subscale of the Rumination-Reflection Questionnaire (RRQ) was utilized to assess participants' general tendency to ruminate regardless of sadness or depressive symptoms. The RSQ consists of 12 items that assess general self-ruminatory tendencies (Trapnell & Campbell, 1999). Respondents indicate their level of agreement or disagreement of each item on a five-point Likert-type scale ranging from 1 (strongly disagree) to 5 (strongly agree). Items used to measure ruminative responses include: "Often I'm playing back over in my mind how I acted in a past situation," and "Sometimes it is hard for me to shut off thoughts about myself."

The RRQ has been shown to have high internal consistency reliability (> .90), as well as good convergent and discriminant validity with undergraduate college students (Trapnell & Campbell, 1999). All items on the RRQ have been shown to be good measures of their latent factors.

Gender Role

Gender role identification was measured with the Personal Attributes Questionnaire (PAQ; Spence, Helmreich, & Strapp, 1974). The PAQ is a 24-item self-report measure which assesses stereotypical masculinity (instrumentality) and femininity (expressiveness) in terms of the respondent's self-perceived personality traits. These traits are stereotypically believed to differentiate males and females and are considered socially desirable in both sexes. Respondents indicate on a 5-pt Likert-type scale how well each trait describes them (eg., 0 = not at all aggressive, 4 = very aggressive; Lenney, 1991).

The PAQ items were assembled from a pool of items developed by Rosenkrantz, Vogel, Bee, Broverman, and Broverman (1968) from students who were asked to list traits that distinguished males and females. The PAQ has been shown to have high internal consistency reliability (Cronbach's alpha ≥ .80) and validity in samples of undergraduate and graduate college students (Linney, 1991; Spence & Helmreich, 1978; Wilson & Cook, 1984). Factor analyses have identified two distinct factors (stereotypical masculinity and femininity), with each item loading on its intended factor (Helmreich, Spence, & Wilhelm, 1981).

Depressive Symptoms

The severity of depressive symptoms was assessed with the Center for Epidemiological Studies – Depression Scale (CES-D; Radloff, 1977). The CES-D consists of 20 questions that cover affective, psychological, and somatic symptoms. The respondent specifies the frequency with which the symptom was experienced during the previous week (e.g., a little, some, a good part of the time, or most of the time). Items include: "I felt sad," "I felt that I was just as good as other people," and "I felt I could not get going." Possible scores range from 0 through 60, with higher scores indicating more severe depressive symptoms (Carroll, Fielding, & Blashki, 1973). The CES-D has shown high internal consistency reliability (Cronbach's alpha consistently > .80) and acceptable convergent and discriminant validity in a variety of populations, with satisfactory generalizeability across samples (Fountoulakis et al., 2001; Hann, Winter, & Jacobsen, 1999; Radloff, 1977; Scott & Melin, 1998).

Neuroticism

Neuroticism was assessed with the neuroticism subscale of the Eysenck Personality Questionnaire Revised Abbreviated (EPQR-A; Francis et al., 1992). The subscale consists of 6 items, with questions such as, "Are you a worrier?" and "Do you often feel lonely?" Participants

indicated their responses on a 4-pt. Likert-type scale (eg., no, sometimes, often, yes). A total score for neuroticism was computed by summing subjects' responses to the 6 items on the subscale.

The EPQR-A is widely used in personality research. In studies of 685 college students in England, Canada, and Australia, the concurrent validity of the EPQR-A was assessed by investigating the association of the EPQR-A subscales with the corresponding subscales on the Eysenck Personality Questionnaire (EPQ: Eysenck & Eysenck, 1975). Correlations between the two forms ranged between .84 and .90. Reliability of the EPQR-A was demonstrated by computing internal consistency, which was alpha = .70 - .77 for the neuroticism subscale. Lewis and Maltby (1996, 1995) have found comparable levels of internal consistency for the neuroticism subscale among United States college students (alpha = .77) and adults (alpha = .76). Furthermore, a confirmatory factor analysis reveled that all neuroticism items on the EPQR-A were good measures of a single unidimensional latent variable (Forest, Lewis, & Shevlin, 2000). Finally, results from a study of the EPQR and social desirability indicated that social desirability did not need to be controlled for the neuroticism subscale (Davies, French, & Keogh, 2002).

Beliefs about Depression

An 8-item scale was developed in an attempt to measure gender-typed beliefs about depression. The Beliefs About Depression Scale (BADS) is a face-valid, self-report measure. Items were derived on a conceptual basis to assess presence of two general beliefs: (1) the belief that females are not able to alleviate depression due to uncontrollable factors such as biology (eg., "Female hormones can often cause depression") and inherent personality vulnerabilities (e.g., "Females are naturally more likely to experience feelings of sadness or depression than males are"); and (2) the belief that males also experience depression but cannot or do not show it

17

or deal with it in different ways (e.g., "Males are not allowed to show their feelings of sadness or depression in our society"). Respondents indicate the extent to which they agree with each item on a six-point Likert-type scale from 1 (strongly disagree) to 6 (strongly agree). Participants' scores on the scale were utilized to examine the research question of how sex-typed beliefs about depression affect rumination and depression. Psychometric properties of the scale were computed in the current study.

Social Desirability in Responding

Socially desirable responding was assessed with the Social Desirability subscale of the Personal Experience Screening Questionnaire (PESQ; Winters, 1992). The PESQ is a 40-item screen for substance abuse. It addresses (a) behaviors and consequences associated with substance abuse problems, (b) symptoms of socially desirable behaviors which suggest a defensive response style, and (c) admission of using specific substances. The Social Desirability subscale consists of 5 true/false items, with questions such as, "I am always nice to other people, even if they are not nice to me." Participants indicated their responses by circling "true" or "false" for each item. A total score for socially desirable responding was computed by summing subjects' responses to the 5 items on the subscale.

The PESQ has been shown to have adequate reliability and validity in samples of adolescents (Rogers & Kelly, 1997; Winters, 1992). Other research has found the PESQ to be highly stable over time (Neumann, Robertson & Silverthon, 1999).

Alcohol Abuse

Alcohol abuse was assessed with the Alcohol Use Disorders Identification Test (AUDIT). The AUDIT is a 10-item self-report measure designed to assess current harmful and hazardous alcohol use in adults (Maisto, Conigliaria, McNeil, & Kraemer, 2000). Items include questions

such as: "How often do you have six or more drinks on one occasion?" "How often during the year have you been unable to remember what happened the night before because of drinking?" and "How often during the last year have you failed to do what was normally expected of you because of drinking?" Eight of the ten items refer to the previous year, with responses weighted between 0 and 4, generally based on the frequency of occurrence. The remaining two items ask about lifetime alcohol-related problems and allocate a higher weight for incidents occurring during the past year, with lower weights for those occurring more than a year in the past.

The validity of the AUDIT has been established, with validity coefficients generally .80 - .89 (Allen, Litten, Fertig, & Babor, 1997). In a sample of college students, the AUDIT exhibited a sensitivity of .84 and a specificity of .71 when utilizing the recommended cut-off score of 11 (Fleming, Barry, & MacDonald, 1991). Internal consistency reliability was alpha = .80.

The AUDIT is equally suitable for males and females, with favorable sensitivity and specificity for both sexes (Allen et al., 1997). Furthermore, a study of the role of ethnicity on AUDIT results found that validity was equivalent for African-American and Caucasian participants (Cherpitel, 1995).

<center>Procedures</center>

Participants were recruited with flyers distributed in introductory psychology, sociology, and biology courses. Flyers were also placed on bulletin boards in the psychology and science buildings. Participants each completed a packet of questionnaires during one of several scheduled testing times. Participants were not asked to include their names or any identifying information. The following measures were administered: (a) the RSS, (b) the RRQ (c) the PAQ, (d) the CES-D, (e) the EPQR-A, (f) the BADs, (g) the PESQ, and (h) the AUDIT. Average time

<center>19</center>

to complete all 115 items was approximately 30 minutes. Each participant was given one extra-credit point for completing the measures.

Hypotheses And Statistical Analysis

1. Rumination as measured by the RSS would mediate gender differences in depression.

    This hypothesis was tested with a series of regression analyses. The CES-D was regressed on the RSS and on gender in two separate regressions. A hierarchical multiple regression was conducted regressing the CES-D on both the RSS and gender.

    To assess whether rumination-in-general would also mediate gender differences in depression, the CES-D was also regressed on the RRQ and gender.

2. Socialized gender-role would be more strongly associated with rumination than would actual gender.

    Each rumination measure (RRS and RRQ) was regressed separately on the PAQ (gender role) and on gender, with the prediction that the PAQ would predict at least 10% more of the rumination variance than would gender.

3. Gender-role would also be more highly associated with neuroticism than would gender.

    The EPQA-R was regressed separately on the PAQ and on gender, with the prediction that the PAQ would predict at least 10% more of the neuroticism variance than would gender.

4. Gender-role would also have a greater explanatory power for depression than would gender.

    This hypothesis was tested with a series of regression analyses. The CES-D was regressed on gender role and gender in two separate regressions. A hierarchical multiple regression was then conducted regressing the CES-D on both gender role and gender.

5. Rumination would mediate the impact of neuroticism on depression.

      To test this hypothesis, the CES-D was regressed on each rumination measure (RSS and RRQ) and the EPQR-A in separate regression analyses. A hierarchical multiple regression was then conducted regressing the CES-D on rumination and neuroticism.

6. Finally, the entire set of proposed relationships as discussed above and depicted in Figure 1 was tested via structural equation models.

    To most effectively model the number of parameters which could be estimated for each structural equation, I followed the lead of previous SEM studies (Bagozzi & Heatherton, 1994; Byrne, 1988; Greenbaum & Dedrick, 1998; Marsh, 1994; Marsh, Smith, & Barnes, 1985; Marsh & O'Neill, 1984), and relied upon item or scale composites, sometimes referred to as parcels, rather than all single items/scales as indicators for our latent variables (LVs). Parcels, instead of single items, were used as indicators for the LVs because such parcels: (a) tend to be more reliable and valid indicators of LVs, (b) are less skewed than individual items, and most importantly, (c) reduce the number of parameters that have to be estimated, thus improving the ratio of the number of estimated parameters to the number of subjects (Bagozzi & Heatherton, 1994; Marsh, 1994).

    For the current study, preliminary CFAs provided good support for treating each scale as a uni-dimensional construct: EPQ (*CFI* = .90, *SRMR* = .08), PAQ (*CFI* = .97, *SRMR* = .02), RSS (*CFI* = .94, *SRMR* = .04), RRQ (*CFI* = .91, *SRMR* = .04), and CES-D (*CFI* = .96, *SRMR* = .03). As each scale represented a uni-dimensional construct, parcels could be computed by using sub-sets of items within each scale. Parcels were then created by averaging subsets of the items for each factor of each measure so that there were at least two parcels (indicators) per measure. Consistent with research, the items from the CES-D were combined into four parcels, reflecting

mood, positive affect, somatic, and cognitive parcels. Items from the PAQ were combined into

two parcels reflecting confident instrumentality and active instrumentality. Items from the RSS,

RRQ, and EPQ were each combined into three parcels per measure, consistent with results from

the preliminary factor analyses. (Table 1 provides descriptive statistics for total scores and each

parcel; Tables 2 and 3 provide these statistics for women and men, respectively.)

Research Questions

1. As a preliminary research question, this study explored how gender-typed beliefs about
   women and depression (as measured by the BADS) might be associated with other
   primary variables (eg., depression, rumination, gender role, and neuroticism). Analysis
   for this question was conducted via exploratory correlations.

2. The AUDIT variable was also utilized to explore whether depression or the other
   variables would be correlated with symptoms of alcohol abuse.

RESULTS

Descriptive Statistics

Table 1 presents the mean, standard deviation, minimum, maximum, skew, kurtosis, and

Cronbach's alpha for each primary measure. Tables 2 and 3 present the same statistics for

woman and men, respectively. Independent-sample t tests were conducted to assess for gender

differences on each measure. As expected, women reported significantly higher levels of

depression, $t(486) = 3.45, p < .001$, rumination, $t(586) = 3.03, p = .002$, and neuroticism, $t(585)$

$= 5.96, p < .001$. Men reported significantly higher levels of socialized masculine gender role

(instrumentality) $t(586) = 5.22, p < .001$.

Correlations between scores on primary measures for the total sample are presented in Table

4. Tables 5 and 6 display the same correlations for women and men, respectively. As expected,

socialized masculine gender role was negatively related to rumination ($p < .001$), neuroticism ($p < .001$), and depression ($p < .001$). Both rumination-on-sadness and rumination-in-general were negatively related to socialized gender roles ($p < .001$) and positively related to depressive symptoms ($p < .001$) and neuroticism ($p < .001$).

Correlations were also conducted to assess the effects of social desirability on responding. Correlations between scores on a social desirability measure and scores on the above measure were small, $r = -.13$ to .06.

Consistent with expectations, socialized femininity (expressiveness/nurturance) did not significantly affect the variances of depression, rumination, or neuroticism. Therefore, socialized masculinity (instrumentality/agency) was utilized when assessing the effects of socialized gender role.

While not a primary focus of the current study, the BADS (Beliefs About Depression Scale) displayed somewhat disappointing results. Exploratory analyses revealed unsatisfactory internal consistency and small correlations with the CES-D, RRQ, RRS, PAQ-M, and EPQR-A. Although the correlations increased somewhat when examined separately by gender, they nonetheless remained in the small-to-modest range (i.e., $r < .30$). Therefore, the BADS will not be considered further in this study.

Correlations were conducted to explore the relationship between symptoms of alcohol abuse (AUDIT) and other study variables. The AUDIT was significantly correlated with the CES-D ($r = .12$, $p < .01$) and gender ($r = -.24$, $p < .001$), with men reporting more symptoms than women. The AUDIT was not significantly correlated with the EPQA-R, the RSS, or the RRQ. The range of correlations was similar for men and women.

Hypotheses 1 Through 5

Consistent with our first hypothesis, rumination predicted a larger part of the depression variance than did gender ($r^2 = .02$), with rumination completely mediating gender differences in depression. (See Table 7 for summary of all regression results). These effects were found with both rumination-on-sadness (RSS; $r^2 = .40$) and rumination in general (RRQ; $r^2 = .30$).

In support of our second hypothesis, regressions showed that socialized gender role ($r^2 = .13$) accounted for more of the rumination-on-sadness variance than did actual gender ($r^2 = .01$). Gender role ($r^2 = .15$) also accounted for more of the rumination-in-general variance than did gender ($r^2 = .02$). Results also support our third hypothesis, as gender role ($r^2 = .17$) accounted for more of the neuroticism variance than did gender ($r^2 = .06$). Consistent with our fourth hypothesis, socialized gender role ($r^2 = .13$) also predicted a larger part of the depression variance than did gender ($r^2 = .02$), and gender did not account for a significant proportion of the depression variance after controlling for the effects of gender role.

Results did not provide support for our hypothesis that rumination would mediate the impact of neuroticism on depression. Although neuroticism's effect on depression was significantly lessened, neuroticism continued to explain 12% of the variance in depression when rumination-on-sadness was controlled and 18% of the variance in depression when rumination-in-general was controlled. Thus, rumination does not appear to completely mediate the effect of neuroticism on depression nor be simply a cognitive manifestation of neuroticism.

An additional regression analysis was conducted to test an alternative model in which neuroticism mediated the impact of rumination on depression. However, rumination-on-sadness continued to predict 7% of the variance in depression, and rumination-in-general continued to predict 2% of the variance in depression when neuroticism was controlled.

Modeling Latent Variables

Structural equation modeling was utilized to test the relationships among variables.

Consistent with recommendations by Hu and Bentler (1999), the comparative fit index (CFI;

Bentler, 1995) was utilized. The CFI avoids underestimation of fit from sampling variability

associated with other fit indices. Fit values close to .94 are indicative of good fit (Hu & Bentler,

1999). Hu and Bentler (1999) also recommend use of at least one of the following: (a) the root

mean square error of approximation (RMSEA; Steiger, 1990) and (b) a standardized version of

the root mean squared residual (SRMR; Joreskog & Sorbom, 1981). Model fit is good when

RMSEA and SRMR values are at approximately .06 and .08 or less, respectively (Hu & Bentler,

1999). The maximum likelihood procedure was used for CFA/SEM analyses using EQS (version

5.7b; Bentler, 1998) for Windows.

Three models were tested to assess the relationship between gender, socialized gender roles,

rumination, neuroticism, and depression. However, as the CES-D and the EPQA-R were very

highly correlated ($r = .68$), the aim of the SEM was revised (from Figure 1) to predict depressive

symptoms and general negative affect (neuroticism). Thus, the depression and neuroticism latent

variables were utilized as criterion variables, with neuroticism also serving as a direct predictor

of depression (see Figures 2-6). In other words, an initial SEM reflecting Figure 1 revealed that

neuroticism accounted for almost all significant variance of the CES-D. Thus, neuroticism was

treated as a criterion variable. Furthermore, although the models allow rumination, gender, and

gender role to covary, they are statistically identical to models in which rumination is predicted

by gender and gender role.

The first SEM tested focused on the RSS to assess rumination-on-sadness as the primary

rumination variable. Figure 2 depicts the rumination-on-sadness model, along with standardized

coefficients for each path. Results indicate excellent fit to the data, *CFI* = 1.00, *SRMR* = .04, *RMSEA* = .04. Furthermore, this model accounted for 76% of the variance in the depression factor and 70% of the variance in the neuroticism factor. All factor loadings and standardized coefficients were significant with the exception of the direct effect of gender role on depression.

As shown in Figure 2, female gender's direct effect on depression was slightly negative. In other words, when socialized gender role, rumination, and neuroticism were controlled, male gender modestly positively predicted depression. Female gender predicted decreased socialized masculine gender role (instrumentality) and increased rumination and neuroticism. Although gender role did not directly predict depression, it was strongly associated with rumination and had a modest effect on neuroticism. Furthermore, although rumination had a small effect on depression, it had a strong effect on neuroticism, which in turn had a strong direct effect on depression. Thus, rumination-on-sadness and neuroticism appear to mediate the effects of gender role on depression, and neuroticism appears to partially mediate the effects of rumination-on-sadness on depression.

The second SEM involved the RRQ to assess rumination-in-general as the rumination variable. Figure 3 depicts the rumination-in-general model, along with standardized coefficients for each path. Results were similar to those of the previous model. This model also had excellent fit with the data, *CFI* = 1.00, *SRMR* = .04, *RMSEA* = .06; it also accounted for 76% of the depression variance and 70% of the neuroticism variance. All factor loadings were significant. Similar to the rumination-on-sadness model, female gender had a negative effect on depression when controlling for socialized gender role, rumination, and neuroticism. In this model, the direct effect of gender role on neuroticism was not significant; however, gender role significantly negatively predicted depression and was highly negatively associated with rumination.

Unexpectedly, rumination-in-general's prediction of depression was negative when controlling for the other factors. In other words, lower rumination-in-general predicted increased depression. However, this association failed to reach significance at the .05 level.

The third model included both the RSS and the RRQ, thus allowing comparison of the relationships of rumination-on-sadness and rumination-in-general with the other factors (see Figure 4). Once again the fit was excellent, *CFI* = 1.00, *SRMR* = .04, *RMSEA* = .04. Furthermore, this model accounted for 78% of the variance in the depression factor and 74% of the variance in the neuroticism factor. All factor loading and standardized coefficients were significant.

Note that rumination-in-general had a significant negative effect on depression when controlling for the other factors. However, rumination-in-general continued to have a highly positive effect on neuroticism and association with rumination-on-sadness. In contrast, rumination-on-sadness positively predicted both depression and neuroticism. Gender, gender role, and the rumination latent variables were all significantly affected in a meaningful fashion. Female gender positively predicted neuroticism but continued as a negative predictor of depression.

To examine whether the relationship between factors was the same for each gender, the third model was also tested separately for women and men (see Figures 5 and 6, respectively). Fit was good for both women (Robust *CFI* = .96, *SRMR* = .04; *RMSEA* = .07) and men (*Robust CFI* = .95, *SRMR* = .03; *RMSEA* = .07), and there was good correspondence of parameters between the two genders. Therefore, most of the relationships between socialized gender roles, rumination, neuroticism, and depression did not appear to be affected by gender status. However, for males only, socialized gender role (instrumentality) had a significant negative effect on depression. In

other words, males who adopted less socialized masculine gender role tended to have higher levels of depression. This result is consistent with zero order correlations in which socialized gender role is more highly correlated with depression in men than in women.

DISCUSSION

The purpose of this study was to examine the relationship between gender, socialized gender role, rumination, neuroticism, and depression. Research has consistently found that women are at least 1.5 times as likely as men to experience depressive symptoms. The universality of this finding has prompted some to suggest that women's greater tendency toward depression may involve an inherent biological or genetic cause, although little evidence for such a cause has been found (for review, see Brems, 1995; Nolen-Hoeksema, 1990). The results of this study suggest that gender differences in depression and vulnerability factors leading to depression may be more a function of socialized gender roles and rumination then they are a function of actual gender.

Women reported lower levels of socialized masculine gender role (instrumentality) and higher levels of rumination, neuroticism, and depression than did men. Consistent with our hypothesis, regression analyses showed that rumination mediated gender differences in depression. This result was true of both rumination-on-sadness and rumination-in-general. Also as expected, gender role accounted for more of the variance of rumination (both on sadness and in general), neuroticism, and depression than did actual gender. Contrary to prediction, rumination did not mediate the effects of neuroticism on depression. Therefore, rumination apparently cannot be explained as simply a cognitive manifestation of neuroticism. Finally, structural equation modeling revealed that, once socialized gender roles, rumination, and neuroticism are controlled, males were slightly more likely to experience depressive symptoms than were females.

Gender Roles

Substantial research has found socialized masculine gender role (instrumentality and agency) to be a protective factor against depression (Allgood-Merten, Lewinsohn, & Hops, 1990; McGrath, Keita, Strickland, & Russo, 1991; Petersen, Sarigiani, & Kennedy, 1991). However, questions still remain about the process through which this relationship occurs. Hence, the current study provides additional evidence of the mechanisms involved in this relationship. Regression analyses found that socialized gender role was a protective factor against rumination, with gender role being more highly associated with rumination than actual gender. Thus, although women are more likely to ruminate than are men, this tendency appears to be more strongly related to the way women and men are socialized than it is to any biological attribute or inherent quality of being female or male. The findings show that when individuals high in socialized masculinity experience feelings of sadness, they are less likely to ruminate, perhaps because they have resources with which to take instrumental action to more effectively deal with such feelings. However, individuals low in socialized masculinity have a less instrumental coping style; thus, when they experience depressive feelings, these individuals are more likely to ruminate about their sadness.

In addition, regression analyses found that socialized masculine gender role is also negatively associated with neuroticism, which is characterized by general negative affect and reactivity. This finding builds upon previous research that also found neuroticism to be more strongly associated with gender role than with gender (Shevlin et al., 2002). Congruously, research has shown that women's identification with gender stereotypes was correlated with the intensity of their reported emotional reactivity after viewing emotion-provoking slides (Grossman & Wood, 1993).

Although many consider neuroticism to be a stable personality trait (Eysenck & Eysenck, 1985; Schrader, 1994), other research has suggested that neuroticism may be more state dependent, with levels changing significantly as a result of life events or counseling (Barnett & Gotlib, 1988; Coyne & Gotlib, 1983). Support for this view of neuroticism comes from numerous studies showing that scores on neuroticism scales are either no different or significantly lower in remitted depressed patients than they are in nondepressed controls (for review, see Barnett & Gotlib, 1988; Segal & Ingram, 1995). Still other research suggests that neuroticism levels may be somewhat stable, while also fluctuating over a lifetime (Santor, Bagby, & Joffe, 1997). The resolution of this issue is beyond the scope of this study.

However, our results linking socialized gender role and neuroticism is consistent with the fact that gender differences in neuroticism are small in childhood but increase around the time of adolescence (Jorm, 1987), which is the period when conforming to social expectations becomes most important. As explained by gender intensification theory, adolescence is the time at which differential gender roles become most pronounced (see Nolen-Hoeksema & Girgus, 1994). Additionally, studies of rumination in early adolescence found that girls are already more likely to ruminate than are boys (Nolen Hoeksema & Girgus, 1994; Schwartz & Koenig, 1996). Therefore, this increased conformation to gender role appears to be associated with the increased levels of rumination and neuroticism – and therefore depression – experienced by girls around the time of adolescence.

Finally, the structural equation modeling results show that when rumination and neuroticism are controlled, socialized gender role's prediction of the depression variance is either insignificant or modest. Thus, gender role does not appear to have a strong direct effect on

depression, but instead affects depression by increasing levels of rumination and neuroticism, which in turn increase vulnerability for depression.

Rumination-on-Sadness

Previous research has shown that rumination accounts for at least part of the gender differences in depression (Nolen-Hoeksema et al., 1993). However, most of this research has measured rumination with the RRRSQ (Nolen-Hoeksema & Morrow, 1991), which has been shown to measure multiple factors (Conway et al., 2000). Furthermore, some researchers question whether some of the items on the RRRSQ actually measure depression as well as rumination, thus explaining the RRRSQ's predictive effects on depression (Stanton, et al., 1994; Treynor, et al., 2003). Therefore, the current study utilized the RSS to achieve a more precise picture of the relationship between gender, rumination-on-sadness, and depression. Statistical analyses of the RSS and the CES-D revealed that all items loaded solely on their appropriate factor with the exception of RSS item 7 ("I lie in bed thinking about my lack of motivation and wondering whether it will ever return"), which loaded on both factors. However, further analyses revealed that 1) model fit was better when all RSS items loaded on the rumination factor, and 2) removal of item 7 from the RSS did not significantly change any results. Therefore, in the interest of consistency with previous research, the RSS was left intact for our study.

Regression analyses found that rumination-on-sadness continued to mediate gender differences in depression when rumination was measure by the RSS. These results provide further support for Nolen-Hoeksema's (1993) theory that women's greater tendency to ruminate is a significant factor in women's greater depression levels. Furthermore, the use of the RSS adds to the literature by indicating that rumination's effects on depression are evident even when measured as a unified factor distinct from automatic negative thoughts or depression.

Note that the structural equation modeling results indicate that rumination-on-sadness has only a small (although significant) direct effect on depression, instead affecting depression predominantly through its very strong association with neuroticism, which in turn has a very strong association with depression. This result is congruous with a longitudinal study that found that rumination predicted not only symptoms of depression, but also symptoms of anxiety and negative self-attributions, thus leading the authors to suggest that rumination is a predictor of general negative affectivity (Schwartz & Koenig, 1999). Therefore, individuals who ruminate may be more likely to then experience negative affectivity and general reactivity to negative stimuli. This negative affectivity may then be the vulnerability factor which leads to an increased likelihood of depression (as well as possibly anxiety and other symptoms). Naturally, increased negative affectivity may also then exacerbate the tendency to ruminate. Future research is needed to explore the relationship between rumination-on-sadness and general negative affectivity.

It is important to note that women's greater tendency to ruminate may occur in part because women's negative life events and daily stressors may be more severe than those of men (Brems, 1995; Nolen-Hoeksema, Grayson, & Larson, 1999). It would seem fairly apparent that severity of life events and daily stress may increase levels of both rumination and depression. However, a study of family members of terminally ill patients found that negative life events increased levels of rumination and depression, but women were more likely to ruminate and rumination was a significant predictor of depression even when negative life events were controlled (see Nolen-Hoeksema, et al., 1993). Hence rumination appears to contribute some unique prediction of depression and negative affectivity above and beyond negative life events.

To summarize the rumination-on-sadness model, gender role was modestly associated with neuroticism and highly associated with rumination-on-sadness; rumination-on-sadness was then

modestly associated with depression and very highly associated with neuroticism; and neuroticism is very highly associated with depression. Moreover, once gender role, rumination, and neuroticism were controlled, men were more likely to experience depressive symptoms than were women.

Rumination-in-General

Research on rumination's role in gender differences in depression has focused almost entire on rumination-on-sadness. The current study adds to the research by exploring the effects of a *general* ruminatory tendency on gender differences in depression. Regression analyses revealed that, like rumination-on-sadness, rumination-in-general also mediates gender differences in depression, thus indicating that depression is not solely related to rumination-on-sadness, but that instead any ruminatory coping style may be a risk factor for depression. However, the structural equation modeling results revealed a slightly more complex picture. Although the rumination-in-general model shared several similar standardized coefficients with the rumination-on-sadness model, some notable differences were revealed.

In contrast with the RSS model, gender role in the rumination-in-general (RRQ) model had a significant, although modest, effect on depression, and no significant relationship with neuroticism. More noteworthy is the fact that, once gender role and neuroticism were controlled, rumination-in-general was negatively associated with depression (although this association did not reach significance at the .05 level). Hence, instead of being a direct vulnerability factor for depressive symptoms, rumination-in-general appeared to be a vulnerability factor for negative affectivity, which may in turn be a vulnerability factor for depression. Congruously, neuroticism explained more of the depression variance in this model than in the rumination-on-sadness model. Therefore, the various types of rumination do not appear interchangeable.

33

Combined Rumination Model

A clearer picture of the specificity of the effects of rumination (both on sadness and in general) is provided by a structural equation model with both the RSS and RRQ variables. When rumination-in-general was added to the model, rumination-on-sadness continued to have a positive effect on both neuroticism and depression. In contrast, when rumination-on-sadness was added to the model, rumination-in-general had a *significant negative* effect on depression. Thus, these results seem to indicate that rumination's association with depression is specific to sadness-related rumination. Although almost seeming counterintuitive when considering the RRQ items (e.g., "My attention is often focused on aspects of myself I wish I'd stop thinking about," and "I often reflect on episodes in my life that I should no longer concern myself with."), these results seem to suggest that, once sadness-related content is removed, a general ruminative style may actually be a *protective* factor against depression. Perhaps the tendency to ruminate on non-sadness related issues keeps one's mind occupied and leaves less time for ruminating on sadness, or perhaps it results in a broader array of thoughts, some of which could be adaptive (i.e., cognitive reframes).

However, the conclusion that rumination-in-general is protective against depression may be too simplistic. First, even when controlling for sadness-related content, rumination-in-general continues to be positively associated with neuroticism, which is strongly associated with depression. Hence, it appears that rumination-in-general is negatively related to *current* depression, but positively related to a risk factor for *future* depression (i.e., increased neuroticism). On the other hand, rumination-in-general may instead lead to other symptoms of negative affectivity, such as anxiety. Finally, rumination-in-general is also strongly associated with rumination-on-sadness, thus suggesting a large overlap between the two cognitive styles.

Thus, longitudinal research is needed to explore the complex effects of rumination-in-general, rumination-on-sadness, neuroticism, and depression.

Finally, tests of this model for women vs. men found good correspondence of parameters between the two genders. Therefore, the relationship between gender roles, rumination, neuroticism, and depression appear to be similar as a function of gender status. However, one exception to the gender specific models was that, for only men, gender role had a modest effect on depression. In other words, men who adopted less socialized masculine gender role tended to have higher levels of depression, possibly because men may be punished by society for not ascribing to traditional masculine roles. Additionally, women displayed less variance on the PAQ (Masculine Scale) than did men. This effect may be because men have more freedom in society to adopt instrumental/agentic roles (Nolen-Hoeksema, 1993), and they might also show more variability in the social roles they adopt. Thus, men manifest more variance in the PAQ, which then leads to the association with depression.

Implications for Further Research

The current study has a number of limitations. First, participants in the study were university students and therefore may not have been representative of the general population. Although women in our study reported significantly higher levels of depressive symptoms than did men, these gender differences were small. This is consistent with substantial studies which have shown that gender differences in depression tend to be smaller in university students than in other adult populations (Nolen-Hoeksema et al., 1999). Therefore, this study should be replicated in samples of the general population. A second limitation relates to assessment procedures. In order to thoroughly assess factors of interest and have a sufficient subject-to-variable ratio for conducting multiple regressions and structural equation modeling, it was necessary to collect

data from a large number of participants. Therefore, written, self-report data was utilized. Finally, as correlational statistics were utilized, no definitive statements can be made about cause and effect, and all speculated directionality is theorized based on the relevant previous research.

The current study suggests a number of important directions for future research. First, research needs to explore these factors in non-college populations to determine whether the same relationship between factors exists in groups which traditionally display greater gender differences in depression. Second, longitudinal studies should examine the relationship between these factors over time. For example, research shows that individuals who ruminate on sadness tend to experience increased levels of depressive symptoms, and these depressive symptoms appear to then amplify the tendency to ruminate (Roberts, Gilboa, & Gotlib, 1998). Exploration of this process with the inclusion of socialized gender roles, neuroticism, and rumination-in-general might lead to a greater understanding of the mechanisms involved in the depression. Additionally, longitudinal research should investigate external factors that may prompt or intensify the examined processes. For example, life stressors may moderate these processes. Therefore, individuals low on instrumentally might be more likely to ruminate when under specific stressors than would those high on instrumentality. However, these individuals may be no more likely to ruminate during low-stress period than would individuals high in instrumentality.

Finally, I in no way mean to imply that the variables in this study are a complete explanation of all facets of gender differences in depression. Women are more likely than men to experience a number of factors that have been correlated with depression (for review, see Bems, 1995; Eagly, Wood, & Diekman, 2000; McGrath et al., 1990). For example, women are more likely than men to experience poverty, sexual abuse and harassment, rape, and workplace

discrimination. Traditional women's roles and careers tend to offer less control and prestige than do those of men. Additionally, women report more chronic daily stressors, less support in romantic relationships, more instances of being caretakers, and more pressure to fit physical media ideals than do men. Thus, it would be impossible to isolate three or four variables to completely explain gender differences in depression.

However, the current study does contribute to the understanding of how socialized gender roles, rumination, and neuroticism interact to affect depression. Furthermore, these variables probably influence and are influenced by a number of factors in the above paragraph. Thus, the current findings are one additional step in pursuit of the clarification of gender differences in depression.

Conclusion

Gender differences in depression appear to be at least partially a function of socialized gender roles, rumination, and neuroticism. Individuals low in socialized masculinity are more likely to ruminate than are individuals high in socialized masculinity. In turn, rumination-on-sadness appears to be a direct vulnerability trait for neuroticism and, to a lesser extent, depression. This neuroticism, or negative affectivity, also appears to be a strong risk factor for depressive symptoms. Furthermore, although women report lower levels of socialized masculinity and higher levels of rumination and neuroticism than do men, the actual relationships between these factors appears to be similar for both genders. Thus, the current findings increase the understanding of not only the processes involved in gender differences in depression, but also the processes involved in depression for both genders.

APPENDIX A

TABLES

TABLE 1

Descriptive Statistics for Scores on Primary Measures and Respective Parcels

Measure	M	SD	Min	Max	Skew	Kurtosis	Cronbach's $\propto$
CES-D (n = 590)							
Total	17.71	10.92	0.00	55.00	0.65	-0.23	0.91
Mood	3.79	3.22	0.00	12.00	0.65	-0.50	0.86
Pos Affect	3.87	2.84	0.00	12.00	0.43	-0.63	0.80
Somatic	4.09	2.47	0.00	11.00	0.43	-0.37	0.57
Cognitive	3.03	2.25	0.00	12.00	0.97	0.69	0.67
PAQ - Mas (n = 590)							
Total	27.83	5.23	12.00	40.00	-0.44	0.30	0.73
Active	14.56	3.07	4.00	20.00	-0.60	0.36	0.67
Confidence	6.62	1.80	2.00	10.00	-0.40	-0.01	0.72
PAQ – Fem (n = 590)	31.57	5.13	8.00	40.00	-0.66	0.90	0.83
RRQ (n = 590)							
Total	37.82	10.69	13.00	60.00	-0.04	-0.65	0.92
RRQ1	10.53	2.81	3.00	15.00	-0.44	-0.10	0.72
RRQ2	12.09	4.25	4.00	20.00	0.03	-0.91	0.86
RRQ3	15.20	5.14	5.00	25.00	0.04	0.77	0.88
RSS (n = 585)							
Total	33.23	12.88	13.00	65.00	0.26	-0.85	0.93

(table continues)

TABLE 1 (continued)

Measure	M	SD	Min	Max	Skew	Kurtosis	Cronbach's ∝
RSS1	12.03	4.70	3.00	20.00	-0.11	-1.06	0.90
RSS2	8.93	4.03	4.00	20.00	0.66	-0.36	0.78
RSS3	12.27	5.51	5.00	25.00	0.42	-0.82	0.89
EPQR-A (n = 585)							
Total	12.85	4.36	6.00	24.00	0.58	-0.35	0.83
EPQ1	4.56	1.60	1.00	8.00	0.50	-0.41	0.71
EPQ2	4.39	1.88	1.00	8.00	0.48	-0.80	0.77
EPQ3	3.90	1.61	2.00	8.00	0.76	-0.19	0.50

TABLE 2

Descriptive Statistics for Women's Scores on Primary Measures and Respective Parcels

Measure	M	SD	Min	Max	Skew	Kurtosis	Cronbach's ∝
CES-D (n = 378)							
Total	18.81	11.32	0.00	55.00	0.56	-0.37	0.92
Mood	4.14	3.30	0.00	12.00	0.53	-0.71	0.87
Pos Affect	4.00	2.87	0.00	12.00	0.35	-0.79	0.82
Somatic	4.19	2.52	0.00	11.00	0.37	-0.38	0.59
Cognitive	3.18	2.28	0.00	12.00	0.95	0.71	0.66
PAQ - Mas (n = 377)							
Total	27.00	5.10	12.00	40.00	-0.39	0.18	0.73
Active	14.33	3.11	4.00	20.00	-0.53	0.18	0.67
Confidence	6.38	1.80	2.00	10.00	-0.28	-0.27	0.76
PAQ – Fem (n = 377)	32.88	4.70	8.00	40.00	-.0.93	2.34	0.82
RRQ (n = 378)							
Total	39.00	10.46	13.00	60.00	-0.17	-0.56	0.91
RRQ1	10.94	2.62	3.00	15.00	-0.45	-0.04	0.69
RRQ2	12.48	4.23	4.00	20.00	-0.09	-0.90	0.87
RRQ3	15.58	5.11	5.00	25.00	-0.04	-0.75	0.88
RSS (n = 374)							
Total	34.42	12.61	13.00	65.00	0.11	-0.95	0.93

(table continues)

TABLE 2 (continued)

Measure	M	SD	Min	Max	Skew	Kurtosis	Cronbach's $\propto$
RSS1	12.72	4.63	3.00	20.00	-0.23	-1.04	0.90
RSS2	9.10	3.10	4.00	20.00	0.51	-0.62	0.76
RSS3	12.60	5.53	5.00	25.00	0.30	-0.98	0.89
EPQR-A (n = 373)							
Total	13.63	4.33	6.00	24.00	0.39	-0.54	0.82
EPQ1	4.75	1.64	1.00	8.00	0.41	-0.62	0.71
EPQ2	4.76	1.87	1.00	8.00	0.26	-0.93	0.74
EPQ3	4.11	1.61	2.00	8.00	0.60	-0.40	0.45

TABLE 3

Descriptive Statistics for Men's Scores on Primary Measures and Respective Parcels

Measure	M	SD	Min	Max	Skew	Kurtosis	Cronbach's ∝
CES-D (n = 211)							
Total	15.69	9.87	0.00	46.00	0.78	0.12	0.90
Mood	3.17	2.99	0.00	12.00	0.89	0.13	0.82
Pos Affect	3.64	2.80	0.00	12.00	0.62	-0.23	0.77
Somatic	3.89	2.35	0.00	10.00	0.56	-0.28	0.53
Cognitive	2.75	2.17	0.00	10.00	1.01	0.59	0.69
PAQ - Mas (n = 211)							
Total	29.29	5.15	12.00	40.00	-0.63	0.88	0.70
Active	14.96	2.97	4.00	20.00	-0.71	0.85	0.59
Confidence	7.04	1.80	2.00	10.00	-0.62	0.86	0.64
PAQ – Fem (n = 211)	29.20	5.03	12.00	40.00	-0.35	0.29	0.79
RRQ (n = 211)							
Total	35.69	10.82	13.00	60.000.	0.22	-0.57	0.91
RRQ1	9.00	3.00	3.00	15.00	-0.29	-0.38	0.72
RRQ2	11.36	4.20	4.00	20.00	0.26	-0.75	0.84
RRQ3	14.53	5.14	5.00	25.00	0.19	0.17	0.85
RSS (n = 211)							
Total	31.09	13.14	13.00	65.00	0.57	-0.46	0.94

(table continues)

TABLE 3 (continued)

Measure	M	SD	Min	Max	Skew	Kurtosis	Cronbach's $\propto$
RSS1	10.79	4.59	3.00	20.00	0.10	-0.95	0.89
RSS2	8.62	4.18	4.00	20.00	0.92	0.15	0.80
RSS3	11.68	5.45	5.00	25.00	0.65	-0.40	0.89
EPQR-A (n = 211)							
Total	11.46	4.07	6.00	24.00	1.05	0.79	0.84
EPQ1	4.22	1.49	2.00	8.00	0.64	0.13	0.69
EPQ2	3.72	1.72	2.00	8.00	1.01	0.25	0.78
EPQ3	3.52	1.55	2.00	8.00	1.16	0.79	0.55

TABLE 4

Correlations Between Total Sample's Scores on Primary Measures

Measures	CES-D	PAQ-M	RRQ	RSS	EPQR-A	Gender
CES-D	1.00	-0.37**	0.55**	0.63**	0.68**	0.14*
PAQ-M	--	1.00	-0.39**	-0.37**	-0.42**	-0.21**
RRQ	--	--	1.00	0.68**	0.63**	0.15**
RSS	--	--	--	1.00	0.62**	0.12*
EPQR-A	--	--	--	--	1.00	0.24**

Note: * $p < .01$. **$p < .001$.

TABLE 5

Correlations Between Women's Scores on Primary Measures

Measures	CES-D	PAQ-M	RRQ	RSS	EPQR-A	
CES-D	1.00	-0.30**	0.54**	0.61**	0.66**	
PAQ-M	--	1.00	-0.39**	-0.33**	-0.39**	
RRQ	--	--	1.00	0.65**	0.65**	
RSS	--	--	--	1.00	0.62**	
EPQR-A	--	--	--	--	1.00	

Note: **$p < .001$.

TABLE 6

Correlations Between Men's Scores on Primary Measures

Measures	CES-D	PAQ-M	RRQ	RSS	EPQR-A
CES-D	1.00	-0.46**	0.55**	0.66**	0.69**
PAQ-M	--	1.00	-0.34**	-0.39**	-0.38**
RRQ	--	--	1.00	0.72**	0.57**
RSS	--	--	--	1.00	0.61**
EPQR-A	--	--	--	--	1.00

Note: **$p < .001$.

TABLE 7

Regression Analyses for Total Sample

Criterion	Predictor	Beta	Adjust. R2	F
CES-D	Gender	0.14**	0.02	11.27
CES-D	RSS	0.63**	0.40	394.90
CES-D	RSS	0.63**	0.40	394.58
	Gender	0.06	0.40	3.55 (199.92)
CES-D	RRQ	0.55**	0.30	253.40
CES-D	RRQ	0.54**	0.30	253.26
	Gender	0.06	0.30	2.67(128.32)
RSS	Gender	0.12*	0.01	9.17
RSS	PAQ-M	-0.36**	-0.13	88.86
RRQ	Gender	0.15**	0.02	13.26
RRQ	PAQ-M	-0.39**	0.15	104.82
CES-D	PAQ-M	-0.36**	0.13	87.96
CES-D	PAQ-M	-0.35**	0.13	88.75
	Gender	0.06	0.13	2.55 (45.77)
EPQR-A	Gender	0.24**	0.06	35.52
EPQR-A	PAQ-M	-0.41**	0.17	120.44
CES-D	EPQR-A	0.68**	0.46	498.21
CES-D	RRS	0.35**	0.41	393.95
	EPQR-A	0.46**	0.53	163.74 (333.65)
CES-D	RRQ	0.20**	0.30	250.33
	EPQR-A	0.55**	0.48	208.02 (273.40)
CES-D	EPQR-A	0.46**	0.46	496.48
	RSS	0.35**	0.53	92.85 (333.65)
CES-D	EPQR-	0.55**	0.46	498.21
	RRQ	0.20**	0.48	26.72 (273.40)

Note: *$p < .01$. **$p < .001$.

APPENDIX B

FIGURES

FIGURE 1

The Proposed Relationship Between Gender, Socialized Gender Roles, Neuroticism,
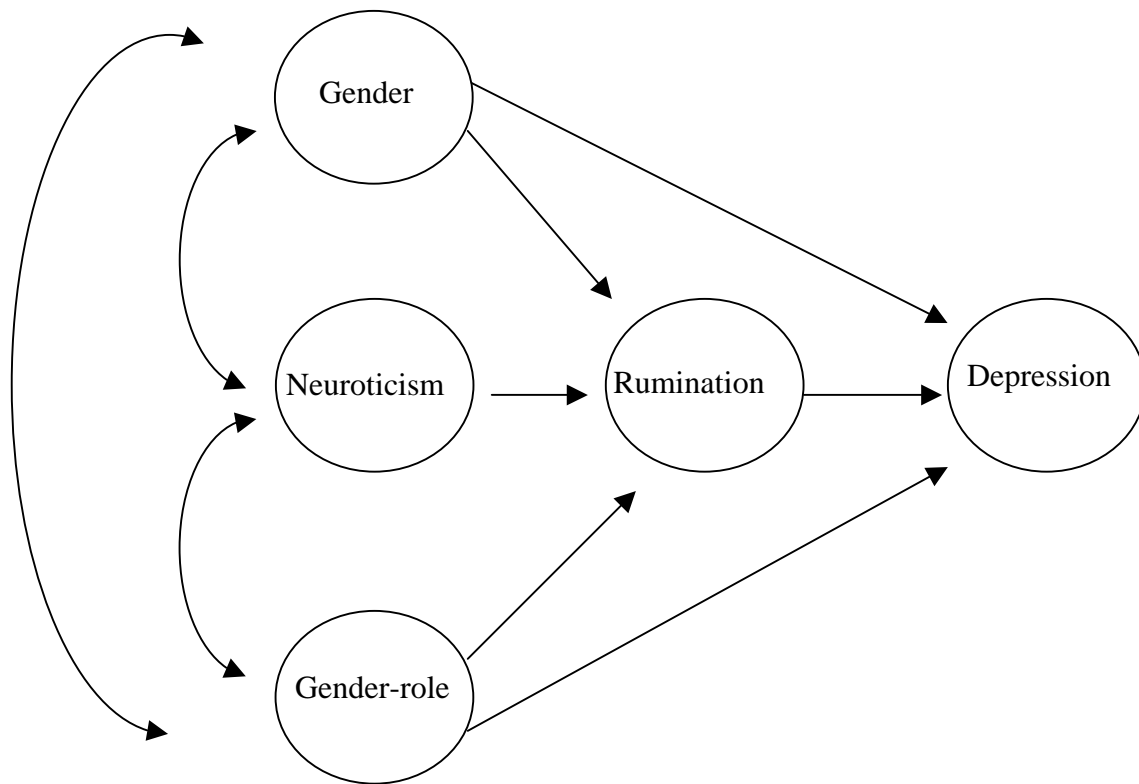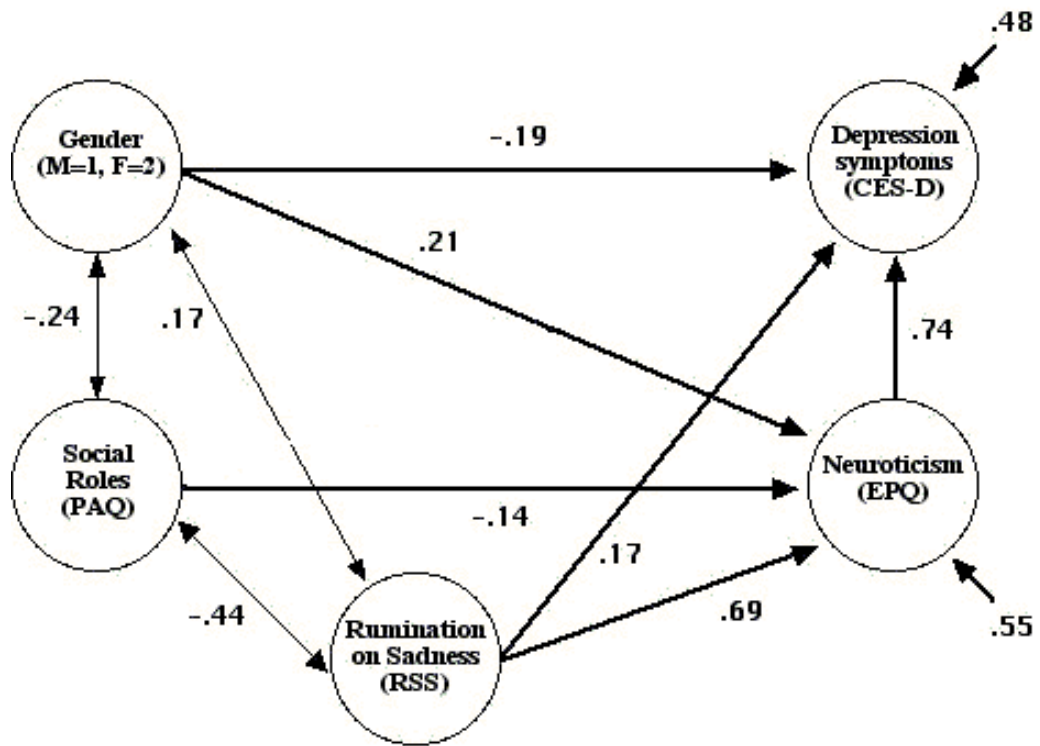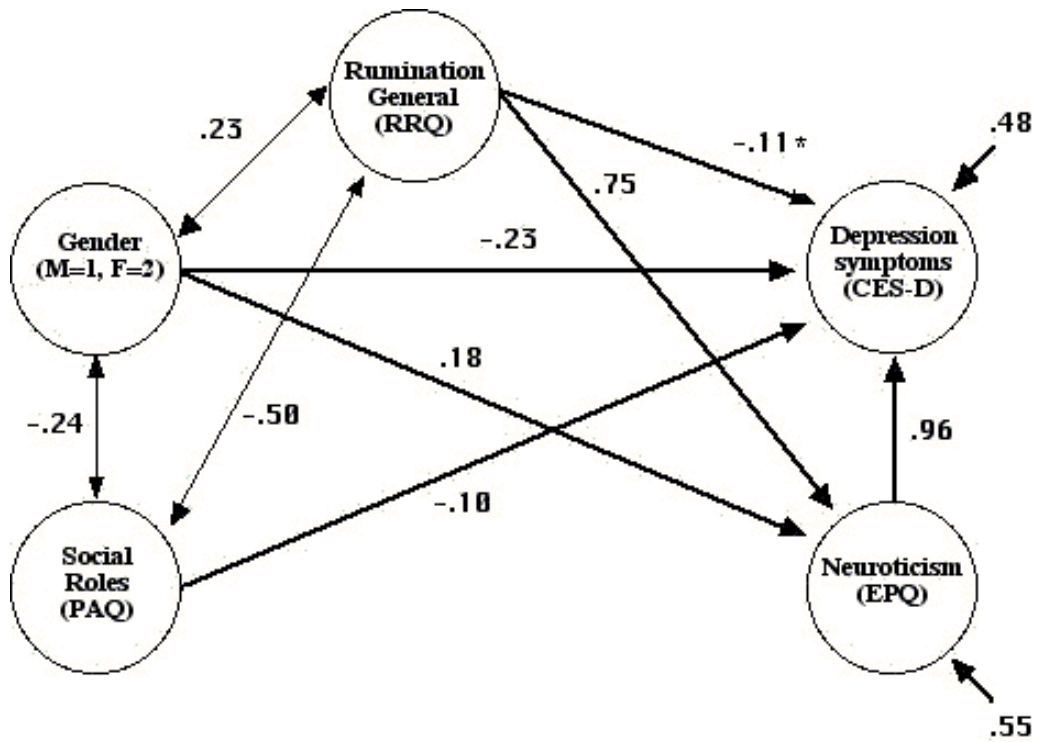
Rumination, and Depression

FIGURE 2

Rumination-on-Sadness Model

Note: All paths shown are significant at *p* < .05 or less.

FIGURE 3

Rumination-in-General Model.

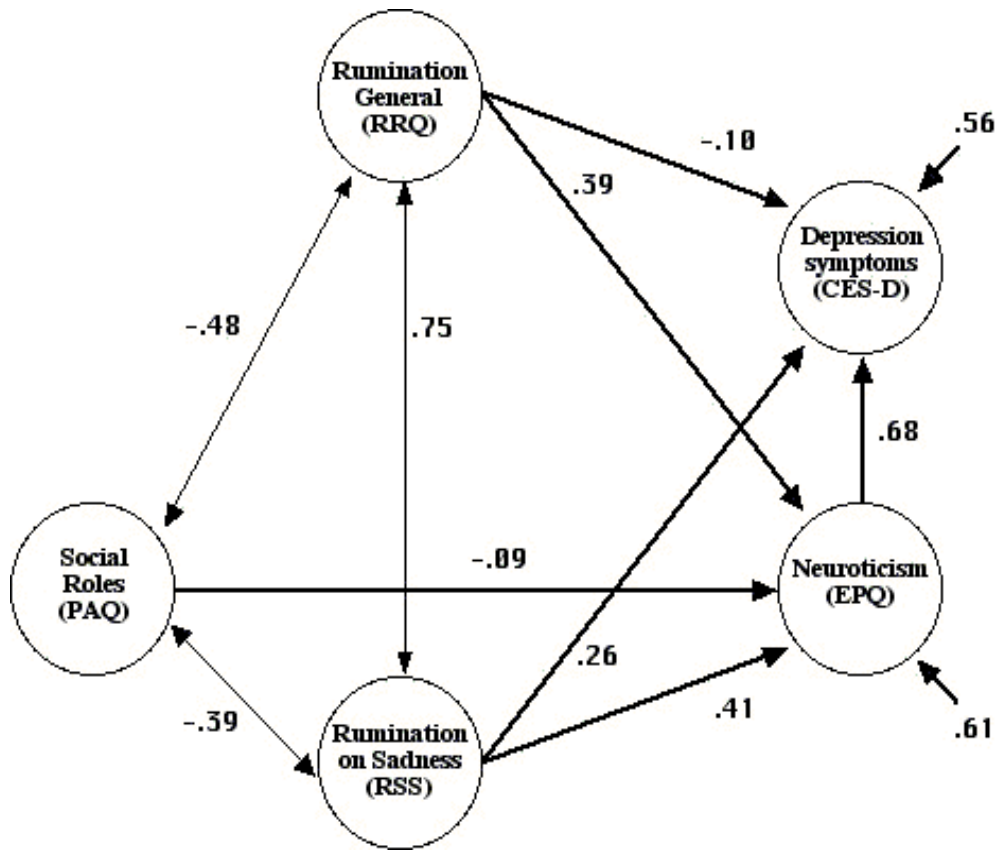Note: All paths shown are significant at *p* < .05, except for path noted with *.

FIGURE 4

Combined Model With Rumination-on-Sadness and Rumination-in-General for Total Sample
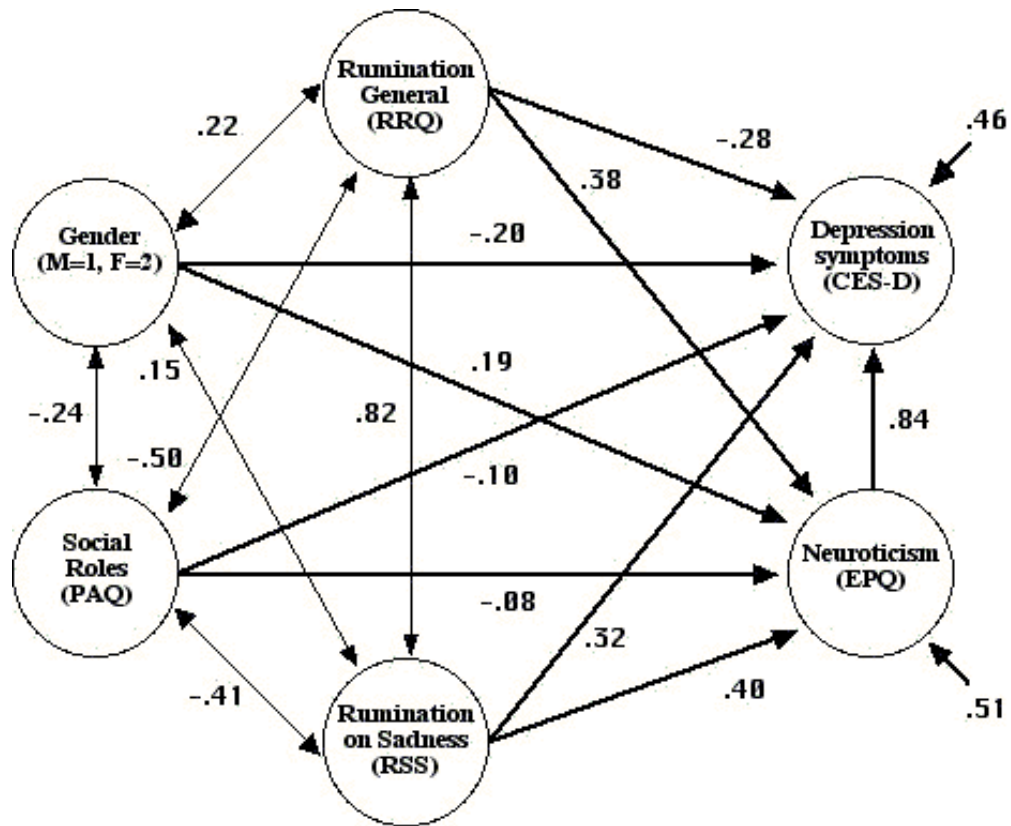
Note: All paths shown are significant at $p < .05$.
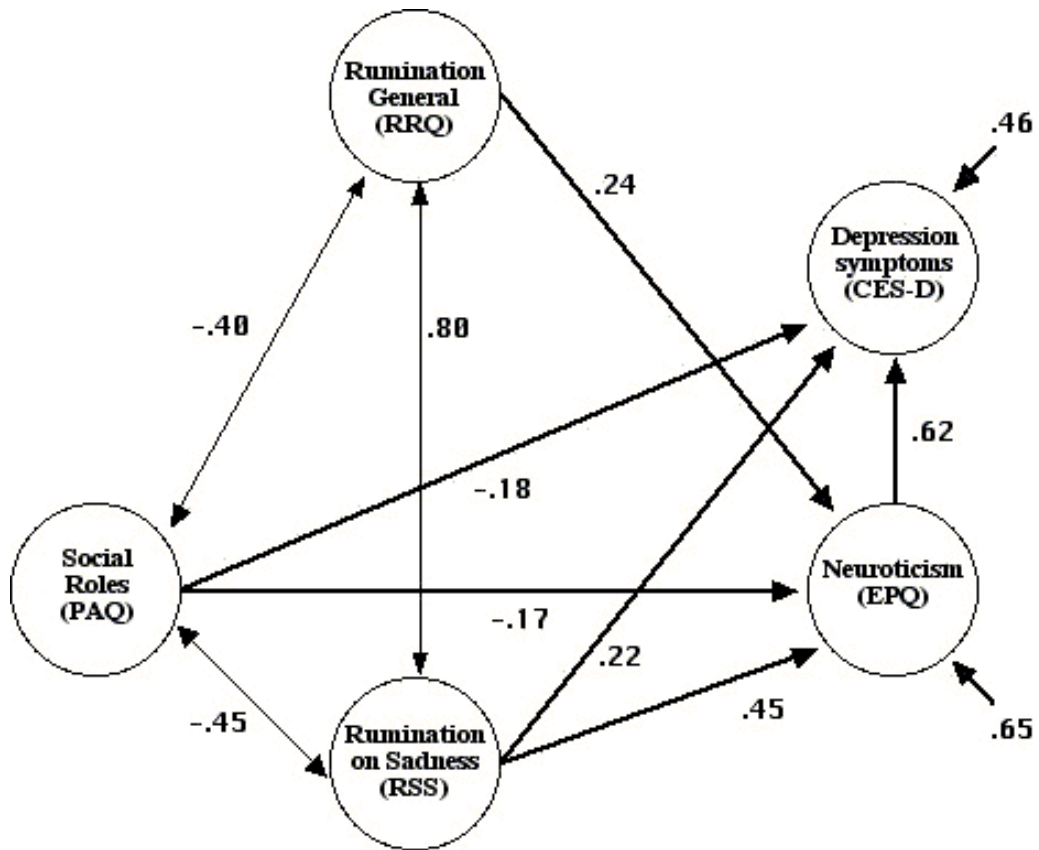
FIGURE 5

Combined Rumination Model with Female Sample

Note: All paths shown are significant at *p* < .05.

FIGURE 6

Combined Rumination Model with Male Sample

Note: All paths shown are significant at *p* < .05.

REFERENCES

Allen, J.P., Litten, R.Z., Fertig, J.B., & Babor, T. (1997) A review of research on the alcohol use disorders identification test (AUDIT). *Clinical and Experimental Research, 21*, 613-619.

Allgood-Merten, B., Lewinsohn, P.M., & Hops, H. (1990). gender differences and adolescent depression. *Journal of Abnormal Psychology, 99,* 55-63.

Bagozzi, R.P., & Heatherton, T.F. (1994). A general approach for representing multifaceted personality constructs: Application to state self-esteem. *Structural Equation Modeling, 1,* 35-67.

Barnett, P.A., & Gotlib, I.H. (1988). Psychosocial functioning and depression: Distinguishing among antecedents, concomitants, and consequences. *Psychological Bulletin, 104*, 97-126.

Bentler, P.M. (1980). Multivariate analysis with latent variables: Causal modeling. *Annual Review of Psychology*, *31*, 419-56.

Bentler, P.M. (1995). *EQS structural equations program manual*. Encino, CA: Multivariate Software, Inc.

Berlanga, C., Heinze, G., Torres, M., Apiquian, R., Caballero, A. (1999). Personality and clinical predictors or recurrence of depression. *Psychiatry Services, 50,* 376-380.

Birnbaum, D.W. (1983). Preschoolers' stereotypes about gender differences in emotionality: A reaffirmation. *Journal of Genetic Psychology, 143*, 139-140.

Brody, L.R., & Hall, J.A. (1993). Gender and emotion. In M. Lewis & J.M. Haviland (Eds.), *Handbook of Emotions* (pp.447-460). New York: Guilford.

Brems, C. (1995). Women and depression: A comprehensive analysis. In E.E. Beckham & W.R. Leber (Eds.), *Handbook of Depression* (pp. 539-566). New York, NY: Guilford Press.

Butler, L.D., & Nolen-Hoeksema, S. (1994). Gender differences in responses to depressed mood in a college sample. *Sex Roles*, *30,* 331-371.

Carroll, B.J., Fielding, J.M., & Blashki, T.G. (1973). Depression rating scales: a critical review. *Archives of General Psychiatry, 28*, 361-366.

Cherpitel, C.J. (1995). Analysis of cut points for screening instruments for alcohol problems in the emergency room. *Journal of Studies on Alcohol, 56,* 695-700.

Conway, M., Csank, P.A.R., Holm, S.L., & Blake, C.K. (2000). On Assessing Individual Differences in Rumination-on-sadness. *Journal of Personality Assessment, 75*, 404-425.

Conway, M., Giannopoulos, C., & Stiefenhofer, K. (1990). Response styles to sadness are related to gender and gender role orientation. *Sex Roles, 22*, 579-587.

Cooper, M.L., Russell, M., & George, W.H. (1988). Coping, expectancies, and alcohol abuse: A test of social learning formations. *Journal of Abnormal Psychology, 97*, 218-230.

Coyne, J.C., & Gotlib, I.H. (1983). The role of cognition in depression: A critical approach. *Psychological Bulletin, 94,* 472-505.

Craighead, L.W., & Green, B.J. (1989). The relationship between depression and sex-typed personality characteristics in adolescents. *Journal of Youth and Adolescence, 18,* 467-474.

Davies, M.F., French, C.C., Keogh, E. (2002) Self-deceptive enhancement and impression management correlates of EPQ-R dimensions. *Journal of Personality Assessment, 78,* 370-89.

Duggan, C.F., Lee, A.S., & Murray, R.M. (1990). Does personality predict long-term outcome in depression? *British Journal of Psychiatry, 157*, 19-24.

Dunn, G., Everett, A. & Pickels, E. (1993). *Modeling Covariance Structures using EQS*. New York: Chapman & Hall.

Eagly, A.H. (1997). Sex differences in social behavior: Comparing social role theory and evolutionary psychology. *American Psychologist, 52,* 180-183.

Eagly, A.H., & Steffan, V.J. (1984). Gender stereotypes stem for the distribution of women and men into social roles. *Journal of Personality and Social Psychology*, 46, 735-754.

Eagly, A.H., & Steffan, V.J. (1986). Gender stereotypes, occupational roles, and beliefs about part-time employees. *Psychology of Women Quarterly, 10,* 252-262.

Eagly, A.H., Wood, W., & Diekman, A.B. (2000). Social role theory of sex differences and similarities: A current appraisal. In T. Eckes, & H.M. Trautner (Eds). (2000). *The developmental social psychology of gender.* (pp. 123-174). Mahway, NJ: Lawrence Erlbaum Associates.

Eccles, J.S., Miller, C., Tucker M.L., Becker, J., Schramm, W., Midgley, R., Holems, W., Pasch, L., & Miller, M. (1988, March). *Hormones and affect at early adolescence*. Paper presented at the biennial meeting of the Society for Research on Adolescence, Alexandria, VA.

Eysenck, H.J. & Eysenck, S.B. (1975). Manual of the Eysenck Personality Questionnaire. San Diego, CA: Educational and Industrial Testing Service.

Eysenck, H.J. & Eysenck, S.B. (1985). *Personality and individual differences: A natural science approach.* New York: Plenum Press.

Fleming, M.F., Barry, K.L., & MacDonald, R. (1991). The alcohol use disorders identification test (AUDIT) in a college sample. *The International Journal of Addiction, 26*, 1173-1185.

Forrest, S., Lewis, C.A., & Shevlin, M. (2000). Examining the factor structure and the differential functioning of the Eysenck Personality Questionnaire Revised – Abbreviated. *Personality and Individual Differences, 29,* 579-588.

Fountoulakis, K.N., Iacovides, A., Kleanthous, S., Samolis, S., Kaprinis, S.G., Sitzoglou, K., St. Kaprinis, G., & Bech, P. (2001). Reliability, validity and psychometric properties of the Greek translation of the Center for Epidemiological Studies – Depression (CES-D) Scale. *BioMedcentral Psychiatry, 1*, 13- 23.

Francis, L.J., Brown, L.B., & Philipchalk, R. (1992). The development of an abbreviated form of the Revised Eysenck Personality Questionnaire (EPQR-A): its use among students in England, Canada, the USA and Australia. *Personality and Individual Differences, 13*, 443- 449.

Greenbaum, P.E., & Dedrick, R.F. (1998). Hierarchical confirmatory factor analysis of the Child Behavior Checklist. *Psychological Assessment, 10*, 149-155.

Grossman, M., & Wood, W. (1993). Gender differences in intensity of emotional experience: A social role interpretation. *Journal of Personality and Social Psychology, 65*, 1010-1022.

Hann, D., Winter, K., & Jacobsen, P. (1999). Measurement of depressive symptoms in cancer patients: Evaluation of the Center for Epidemiological Studies Depressive Scale (CES-D). *Journal of Psychosomatic Research, 46*, 437-443.

Helmreich, R.L., Spence, J.T., & Wilhelm, J.A. (1981). A psychometric analysis of the Personal Attributes Questionnaire. *Sex Roles, 7,* 1097-1108.

Hershberger, R. (1998). Personality measurement. In S. Embretson & M. Reise (Eds.), *The new rules of measurement.* New York: Sage.

Hoyle, R.H. (1995). Structural equation modeling: Concepts, issues and applications. Thousand Oaks: Sage.

Hu, L. & Bentler, P.M. (1998). Fit indices in covariance structure modeling: Sensitivity to underparameterized model misspecification. *Psychological Methods, 3*, 424-453.

Hu, L. & Bentler, P.M. (1999). Cut-score criteria for fit indexes in covariance structure analysis: Conventional criteria versus new alternatives. *Structural Equation Modeling, 6*, 1-55.

Huselid, R.F., & Cooper, M.L. (1992). Gender roles as mediators of gender differences in adolescent alcohol use and abuse. *Journal of Health and Social Behavior, 33,* 348-362.

Ingram, R.E., Cruet, D., Johnson, B.R., & Wisnicki, K.S. (1988). Self-focused attention, gender, gender role, and vulnerability to negative affect. *Journal of Personality and Social Psychology, 55*, 967-978.

Jorm, A.F. (1987). Sex differences in neuroticism: A quantitative synthesis of published research. *Australian and New Zealand Journal of Psychiatry, 21,* 501-506.

Just, N., & Alloy, L. B. (1997). The response styles theory of depression: Tests and an extension of the theory. *Journal of Abnormal Psychology, 106*, 221–229.

Kessler, R.C., Crum, R.M, Warner, L.A., Nelson, C.B., Schulenberg, J., Anthony, J.C., (1997). Lifetime co-occurrence of DSM-III-R alcohol abuse and dependence with other psychiatric disorders n the National Comorbidity Survey. *Archives of General Psychiatry, 54,* 313-321.

Kessler, R.C., McGonagle, K.A., Shanyang, Z., Nelson, C.B., Hughes, M., Eshleman, S., Wittchen, H.U., & Kendler, K.S. (1994). Lifetime and 12-month prevalence rate of DSM-III-R psychiatric disorders in the United States: Results from the National Comorbidity Survey. *Archives of General Psychiatry, 51*, 8-19.

Lenney, E. (1991). Sex roles: the measurement of masculinity, femininity, and androgyny. In J.P. Robinson, P.R. Shaver, & L.S. Wrightman, *Measures of personality and social psychological attitudes*, San Diego: Academic Press.

Lewis, C.A., & Maltby, J. (1995). The reliability and validity of the Francis Scale of Attitude

   Towards Christianity among U.S. adults. *Psychological Reports, 76,* 1243-1247.

Lewis, C.A., & Maltby, J. (1996). Personality, prayer and church attendance in a sample of male

   college students in the U.S.A.

Marsh, H.W. (1994). Using the National Longitudinal Study of 1988 to evaluate theoretical

   models of self-concept: The Self-Description Questionnaire. *Journal of Educational*

   Psychology, 86, 439-456.

Marsh, H.W., & O'Neill, R. (1984). Self-Description Questionnaire III: The construct validity of

   multidimensional self-concept ratings by late adolescents. *Journal of Educational*

   Measurement, 21, 153-174.

Marsh, H.W., Smith, I.D., & Barnes, J. (1985). Multidimensional self-concepts: Relations with

   sex and academic achievement. *Journal of Educational Psychology, 77*, 581-596.

Maisto, S.A., Conigliaria, J., McNeil, M., Kraemer, K., & Kelley, M.E. (2000). An empirical

   investigation of the factor structure of the audit. *Psychological Assessment, 12*, 346-353.

McGrath, E., Keita, G.P., Strickland, B.R., & Russo, N.F. (Eds.) (1990). *Women and depression:*

   Risk factors and treatment issues. Washington DC: American Psychological Association.

Neumann, C.S., Robertson, A. & Silverthorn, P. (1999). Structural equation modeling of

   substance use, psychopathology and antisocial temperament in adolescents. *Paper*

   presented at the Eleventh Annual Conference of the American Psychological Society,

   Denver, CO. June 3-6, 1999.

Nolen, S.A., Roberts, J.E., & Gotlib, I.H. (1998). Neuroticism and ruminative response style as

   predictors of change in depressive symptomology. *Cognitive Therapy and Research, 22*,

   445-455.

Nolen-Hoeksema, S. (1987). Gender differences in unipolar depression: Evidence and theory. *Psychological Bulletin, 101*, 259-282.

Nolen-Hoeksema, S. (1991). Responses to depression and their effects on the duration of depressive episodes. *Journal of Abnormal Psychology*, *100,* 569-582.

Nolen-Hoeksema, S. (1993). Gender differences in control of depression. In D.M. Wegner & J.W. Pennebaker (Eds.), *Handbook of mental control* (pp. 306-324). NJ: Prentice-Hall, Inc.

Nolen-Hoeksema, S., & Girgus, J.S. (1994). The emergence of gender differences in unipolar depression during adolescence. *Psychological Bulletin, 115,* 424-443.

Nolen-Hoeksema, S., Grayson, C., & Larson, J. (1999). Explaining the gender differences in depressive symptoms*. Journal of Personality and Social Psychology, 77,* 1061-1072.

Nolen-Hoeksema, S., & Morrow, J. (1988). [Beliefs about depression]. *Unpublished data.*

Nolen-Hoeksema, S., & Morrow, J. (1991). A prospective study of depression and distress following a natural disaster: The 1989 Loma Prieta earthquake. *Journal of Personality and Social Psychology, 61*, 105-121.

Nolen-Hoeksema, S., Morrow, J., & Fredrickson, B.L. (1993). Response styles and the duration of episodes of depressed mood. *Journal of Abnormal Psychology, 102*, 20-28.

Petersen, A.C., Sarigiani, P.A., & Kennedy, R.E. (1991). Adolescent depression: Why more girls? *Journal of Youth and Adolescence, 20*, 247-271.

Radloff, L. S. (1977). The CES-D scale: A self-report depression scale for research in the general population. Applied Psychological Measurement, 1, 385-401.

Reise, M. (1998). Personality measurement issues viewed through the eyes of IRT. In S. Embretson & M. Reise (Eds.), *The new rules of measurement.* New York: Sage.

Roberts, J.E., Gilboa, E., & Gotlib, I.H. (1998). Ruminative response style and vulnerability to episodes of dysphoria: Gender, neuroticism and episode duration. *Cognitive Therapy and Research, 22*, 401-423.

Rogers, R., & Kelly, K. S. (1997). Denial and misreporting of substance abuse. In R. Rogers (Ed.), *Clinical assessment of malingering and deception (2nd ed.*, *pp. 108-129).* New York: Guilford.

Rosenkrantz, P., Vogel, S., Bee, H., Broverman, I., & Broverman, D.M. (1968). Gender role stereotypes and self-concepts in college students. *Journal of Consulting and Clinical Psychology, 32*, 287-295.

Ruble, D.N., Greulich, F., Pomerantz, E.M., & Gochberg, B. (1993). The role of gender-related processes in the development of gender differences in self-evaluation and depression. *Journal of Affective Disorders, 29*, 97-128.

Santor, D.A., Joffe, R.T., & Bagby, M.B. (1997). Evaluating stability and change in personality and depression. *Journal of Personality and Social Psychology.*

Schrader, G. (1994). Chronic depression: State or trait. *Journal of Nervous Mental Disorders, 182,* 552-555.

Schwartz, J.A., & Koenig, L.J. (1996). Response styles and negative affect among adolescents. *Cognitive Therapy and Research, 20,* 13-36.

Scott, B., & Melin, L. (1998). Psychometric properties and standardized data for questionnaires measuring negative affect, dispositional style and daily hassles: A nation-wide sample. *Scandinavian Journal of Psychology, 39*, 301–307.

Segal, Z.V., & Ingram, R.E. (1995). Mood priming and construct activation in test of cognitive vulnerability to unipolar depression. *Clinical Psychology Review, 14*, 66-695.

Shevlin, M., Baily, F., & Anderson, G. (2002). Examining the factor structure and sources of differential functioning of the Eysenck Personality Questionnaire Revised – Abbreviated. *Personality and Individual Differences, 32*, 479-487.

Snell, W.E., Belk, S.S., & Hawkins, R.C. (1987). Alcohol and drug use in stressful times: The influence of the masculine role and sex-related personality attributes. *Sex Roles, 16*, 359-373.

Spence, J.T., & Helmreich, R.L. (1978). *Masculinity and femininity: Their psychological dimensions, correlates, and antecedents*. Austin: University of Texas Press (24-item PAQ).

Spence, J.T., Helmreich, R.L., & Strapp, J. (1974). The personal attributes questionnaire: a measure of gender role stereotypes and masculinity-femininity. J*ournal of Supplement Abstract Service Catalogue of Selected Documents in Psychology*, 4, 43-44.

Stanton, A.L., Danoff-Burg, S., Cameron, C.L., & Ellis, A.P. (1994). Coping through emotional approach: Problems of conceptualization and confounding. *Journal of Personality and Social Psychology, 66,* 50-562.

Stewart, S.H., Loughlin, H.L., & Rhyno, E. (2001). Internal drinking motives mediate personality domain - drinking relations in young adults. *Personality and Individual Differences, 30*, 271-286.

Trapnell, P.D., & Campbell, J.D. (1999). Private Self-Consciousness and the Five-Factor Model of Personality: Distinguishing Rumination From Reflection. *Journal of Personality and Social Psychology, 76*, 284-304.

Treynor, W., Gonzalez, R., & Nolen-Hoeksema, S. (2003). Rumination reconsidered: A psychometric analysis. *Cognitive Therapy and Research, 27,* 247-259.

Wallace, J.F., & Newman, J.P. (1997). Neuroticism and the attentional mediation of

  dysregulatory psychopathology. *Cognitive Therapy and Research, 21*, 135-156.

Wallace, J.F., & Newman, J.P. (1998). Neuroticism and the facilitation of the automatic

  orienting of attention. *Personality and Individual Differences, 24*, 253-266.

Williams, J.B., & Spitzer, R.L. (1983). The issue of gender bias in the DSM-III. *American*

  Psychologist, 38, 793-798.

Wilson, F.R., & Cook, E.P. (1984). Concurrent validity of four androgyny instruments. *Sex*

  Roles, 11, 813-837.

Winters, K.C. (1992). Development of an adolescent alcohol and other drug abuse screening

  scale: Personal Experience Screening Questionnaire. *Addictive Behaviors, 17,* 479- 490.

Winters, K.C., & Henly, G.A. (1989). *The Personal Experience Inventory (PEI) test and manual.*

  Los Angeles: Western Psychological Services.