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Rachael Kimberly Wicker
Utah State University

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INTERACTIONS BETWEEN EMOTION REGULATION
MEASURES, DEPRESSION, AND GENDER

by

Rachael Kimberly Wicker

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Thesis/Project Advisor	**Departmental Honors Advisor**
Dr. David Stein	Dr. Scott Bates

Director of Honors Program
Dr. Christie Fox

UTAH STATE UNIVERSITY
Logan, UT

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Interactions between emotion regulation measures,

depression, and gender

Rachael K. Wicker

Utah State University

Faculty Advisor: Dr. David Stein

Abstract

Throughout history there has been anecdotal, observational and empirical evidence, as well as entire theoretical frameworks indicating that there are differences between men and women when it comes to emotional expression and regulation. For example, differences exist in how and why different emotions are felt in a given circumstance for men versus women and what behaviors these emotions elicit in others. Yet despite these differences the same questionnaires are used to assess emotion regulation. Furthermore, the same diagnostic criteria are used to assess mood disorders in men and women. In the present study the domains of emotion regulation assessed are: 1) alexithymia: problems with identifying, labeling and expressing negative emotion 2) cognitive problems and coping strategies in emotion regulation, and 3) behavioral problems and coping strategies in emotion regulation. Through extensive evaluation and comparison of subscales present in three widely used emotion regulation questionnaires, relative to depressed mood (the Beck Depression Inventory) and gender this study sought to determine:

1. Which of the three domains of emotion regulation (alexithymia, cognitive, or behavioral), if any, interact with gender in predicting the number and severity of depression symptoms?

2. Which emotion regulation domain involves the most problem and coping constructs that, in turn interact with gender to predict depression?

Keywords: emotional regulation, gender differences, 20-item Toronto Alexithymia Scale (TAS-20), Cognitive Emotion Regulation Questionnaire (CERQ), Difficulties in Emotional Regulation Scale (DERS)

Introduction

We have all heard about, seen, and experienced differences in the way that men and women emotionally react to different situations. Whether one considers an emotional reaction at a movie, being excited to see a friend after a long absence, or how one reacts to getting injured in some way, men and women in our culture tend to react somewhat differently. Research in mood disorders is one area that has received a significant amount of attention with regard to differences in emotional experiences of men versus women (Mueser, Pratt, Bartels, Forester, Wolfe, & Cather, 2009). For example, research in this area has brought to light a consistent finding that women are diagnosed with major depressive disorders many more times than men; specifically, two times more often than men (Borooah, 2010; Gater, Tansella, Korten, Tiemens, Mavreas, & Olatawura, 1998; Noel-Hoeksema, 1990; Weissman, Bland, Canino, Faravelli, Greenwald, Hwu, Joyce, Karam, Lee, Lellouch, Le´pine, Newman, Rubio-Stipec, Wells, Wickramaratne, Wittchen, & Yeh 1996). Most recently, interest has grown surrounding questions regarding how people cope with negative emotional states (e.g., depressed mood). Researchers have been attempting to answer questions about whether various skills and coping strategies, that serve to regulate emotions, may help account for the gender difference in the prevalence of depression symptoms, as well as whether emotion regulation might relate to its severity (Blalock, & Joiner, 2000; Kelly, Tyrka, Price, & Carpenter, 2008; Nolen-Hoeksema, Larson, & Grayson, 1999).

Many experts in the area of emotion regulation conceptualize diverse emotion regulation problems and coping strategies as forming a dichotomous classification i.e. "problem focused" versus "emotion focused" coping strategies (Blalock, & Joiner, 2000; Kohn, Hay, & Legere, 1994). More specifically, "problem focused" is defined as an active management of the problem and "emotion focused" is defined as regulating one's emotional response to the problem. A

thoughtful consideration of this dichotomy reveals a number of conceptual problems. One might reasonably argue that many of the so-called cognitive emotion techniques straddles the two categories i.e. reflecting some aspects of both emotion and problem focused coping e.g. refocus on planning a reputed "problem focused" strategy, does not necessarily involve actively pursuing a solution to the problem, though it may. On the other hand, it does not fall exclusively into the category of attending to your emotions. The question of whether mutually exclusive categories of emotion regulation exist represents one, of many, of the problems associated with conceptualizing emotion regulation. Rather than conceptualize emotion regulation as dichotomous, it is likely more relevant to examine whether particular combinations of emotion regulation problems and coping strategies relate to particular problem domains, such as depression.

One elementary question that has not been adequately addressed to date is whether men and women differ in how particular emotion regulation coping strategies or problems relate to the severity of depression symptoms. Addressing such a question has implications for the way in which clinicians may focus their treatment approaches for depression depending on the gender of their client e.g. should they attempt to change or strengthen overt behaviors and problem solving, cognitions used in emotion regulation, or simply assist people in identifying and describing their feelings? Which skills could be most beneficial to strengthen for men versus women? There have been a variety of findings that are only partially related to the above questions as they focus on gender differences per se, but not on whether gender might interact with emotion regulation to predict depression severity. For instance, significant differences in the use of emotion regulation strategies in respect to gender have been found, including positive reframing and self-blaming (Garnefski, & Kraaji, 2006).

This study examined a much broader range of emotion regulation problems and coping strategies, than has been studied to date, in terms of their relation to depression severity. Utilizing a much larger sample size than past studies, we examined the question of: 1) whether one area of emotion regulation (alexithymia, behavioral, or cognitive) is more represented in gender interactions and 2) whether emotion regulation deficits and coping strategies interacted with gender to predict severity of depression symptoms.

Methods & Procedures

Participants (*n*=1045) in this study included students from three academic departments at a large western university: 61% females, 39% males; mean age 21. Prospective participants were informed of the opportunity to receive extra credit from their professor for participating in a study involving self-reported emotion regulation problems and coping techniques. To date researchers have used a variety of self-report emotion regulation measurements (The Perceived Mastery Scale, The Response Styles Questionnaire; Nolen-Hoeksema, Larson, & Grayson, 1999, and The Cognitive Emotion Regulation Questionnaire; Garnefski, Kraaij, & Spinhoven, 2002), as well as different self-report depression measurements (Hospital Anxiety and Depression Scale HADS; Garnefski, Kraaji, Schroevers, Aarnink, van der Heijden, van Es, van Herpen, & Somsen, 2009); Symptom Check List (Kraaji, Garnegski, & Vlietstra, 2007); Beck Depression Inventory (Beck, Steer, & Brown, 1996). Self-report measures of emotion regulation are the most commonly used method for assessing one's emotion coping skills, strategies and deficiencies. A literature review covering 20 years of research revealed that three self-report emotion regulation questionnaires evaluating emotion regulation, including both cognitive and behavioral emotion regulation skills and deficits, most commonly used among emotion regulation researchers (Hervas, & Jodar, 2008; Jermann, Van der Linden, d'Acremont, &

Zermatten, 2006; Roemer, Lee, Salters-Pedneault, Erisman, Orsillo, & Mennin, 2009; Suslow,

Donges, Kersting, & Arolt, 2000; Williams, & Wood, 2010; Zhu, Auerbach, Yao, Abela, Xiao,

& Tong, 2009). Specifically the 20 Item Toronto Alexithymia Scale (TAS-20; Bagby, Parker, &

Taylor, 1994a; Bagby, Parker, & Taylor, 1994b), Cognitive Emotion Regulation Questionnaire

(CERQ; Garnefski, Kraaij, & Spinhoven, 2002) and Difficulties in Emotion Regulation Scale

(DERS; Gratz, & Roemer, 2004) were used in the present study. The Beck Depression Inventory

was the measurement of depression.

A packet containing a demographic face sheet, The Beck Depression Inventory II (BDI-

II) (Beck, Steer, & Brown, 1996), 20-Item Toronto Alexithymia Scale (20-TAS) (Bagby, Parker,

& Taylor, 1994a; Bagby, Parker, & Taylor, 1994b), Cognitive Emotion Regulation

Questionnaire (CERQ) (Garnefski, Kraaij, & Spinhoven, 2002) and Difficulties in Emotion

Regulation Scale (DERS) (Gratz, & Roemer, 2004) was completed at each students leisure and

were either, dropped off in the psychology office, or, returned to a research assistant in class.

Surveys were given a numerical code to preserve anonymity before being given to students in

their classrooms. Statistical analysis determined which emotion regulation techniques were used

most often, which deficits were most prominent and how these related to depression.

Instruments

20-item Toronto Alexithymia Scale

The 20-Item Toronto Alexithymia Scale (TAS-20) is a self-report questionnaire

consisting of 20 items that measure the prevalence of alexithymia symptoms (Bagby, Parker, &

Taylor, 1994a; Bagby, Parker, & Taylor, 1994b). The four subscales assessed include 1)

Difficulty Identifying Feelings 2) Difficulty Describing Feelings 3) Pragmatic

Thinking/Externally Oriented Thinking 4) Lack of Importance of Emotions/Externally Oriented Thinking. Each subscale is scored on a 5-point Likert scale ranging from "Never True" to "Always True."

Cognitive Emotion Regulation Questionnaire

The Cognitive Emotion Regulation Questionnaire (CERQ) is a 36 item self-report questionnaire (Garnefski, Kraaij, & Spinhoven, 2002). The nine subscales assessed in this inventory are: 1) Self-Blame 2) Acceptance 3) Rumination 4) Positive Refocus 5) Refocus on Planning 6) Positive Reappraisal 7) Putting into Perspective 8) Catastrophizing 9) Other-Blame. These subscales are designed to assess a persons' cognitive reaction after experiencing a stressful life event. Each subscale is scored on a 5-point Likert scale ranging from "Almost Never" to "Almost Always."

Difficulties in Emotion Regulation Scale

The Difficulties in Emotion Regulation Scale (DERS) is a 36 item self-report questionnaire that measures difficulties in areas of behavioral emotion regulation (Gratz, & Roemer, 2004). The scale provides a total score as well as six subscale scores. These subscales include: 1) Non-acceptance of Emotional Response 2) Difficulties Engaging in Goal-directed Behavior 3) Impulse Control Difficulties 4) Lack of Emotional Awareness 5) Limited Access to Emotion Regulation Strategies 6) Lack of emotional Clarity. These subscales are designed to assess a persons' behavioral reaction after experiencing a stressful life event. Some items are reverse-scored. Each subscale is scored on a 5-point Likert scale ranging from "Almost Never" to "Almost Always."

The Beck Depression Inventory-II

The Beck Depression Inventory-II (BDI-II) is a 21 item, multiple choice, self-report assessment that measures the presences of symptoms of and the severity of depression symptoms that are included in a Major Depression diagnosis (Beck, Steer, & Brown, 1996). The multiple choice options range from a-d; choice a. indicates more severe symptoms, with symptom severity decreasing successively in options b, c, and d. Scores are totaled and rated as, either - mild, moderate, or severe. Higher scores indicate a larger presence of symptoms and increased severity of major depression.

Statistical Analyzes

Separating each emotion regulation inventory, a stepwise regression analyses was conducted, where the individual subscales served as the independent variable and the BDI-II serving as the dependent variable.

This determined which subscales from each inventory optimally predicted depression symptoms, in accordance with the BDI-II. The subscales which optimally predicted depression symptoms were then incorporated into an overall hierarchical regression analysis to determine the emotion regulation subscales that interacted with gender most significantly. This analysis found three subscales which interacted with gender. Statistical tests are provided in tables 1-3. The visual representations are figure 1-3.

Table 1

Coefficients[a]

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Correlations		
	B	Std. Error	Beta			Zero-order	Partial	Part
1 (Constant)	8.296	.362		22.901	.000			
gender	.349	.465	.023	.751	.453	.023	.023	.023
2 (Constant)	-1.491	.573		-2.604	.009			
gender	-.867	.399	-.057	-2.174	.030	.023	-.067	-.057
TAIdent	.855	.042	.535	20.263	.000	.527	.529	.529
3 (Constant)	-2.634	.824		-3.198	.001			
gender	1.103	1.097	.073	1.005	.315	.023	.031	.026
TAIdent	.955	.067	.598	14.299	.000	.527	.403	.373
GndrTAIden	-.165	.085	-.161	-1.928	.050	.208	-.059	-.050

Data from the test for the interaction between the Toronto Alexithymia subscale Identification of Feelings and gender, with the BDi-II as the independent variable.

a. Dependent Variable: BeckT

REGRESSION MODEL: 1.103(Gender) + .955 (TAIdent) - .165 (TAIdent*Gender) -2.634 = BeckT.

Table 2

Coefficients[a]

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Correlations		
	B	Std. Error	Beta			Zero-order	Partial	Part
1 (Constant)	8.296	.362		22.947	.000			
gender	.349	.464	.023	.752	.452	.023	.023	.023
2 (Constant)	2.757	.816		3.378	.001			
gender	-.119	.456	-.008	-.260	.795	.023	-.008	-.008
CRumin	.503	.067	.227	7.522	.000	.226	.225	.225
3 (Constant)	.560	1.222		.458	.647			
gender	3.572	1.598	.237	2.236	.026	.023	.069	.067
CRumin	.703	.106	.318	6.607	.000	.226	.199	.197
GndrCrum	-.325	.135	-.281	-2.410	.016	.074	-.074	-.072

Data from the test for the interaction between the CERQ Rumination Subscale and gender, with the BDI-II as the dependent variable.

a. Dependent Variable: BeckT

REGRESSION MODEL: 3.572 (Gender) + .703 (CRumin) - .325(Gender X CRumin) + .560 = BeckT

Table 3

Coefficients[a]

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Correlations		
	B	Std. Error	Beta			Zero-order	Partial	Part
1 (Constant)	8.296	.362		22.947	.000			
gender	.349	.464	.023	.752	.452	.023	.023	.023
2 (Constant)	12.045	.881		13.677	.000			
gender	.397	.460	.026	.863	.388	.023	.027	.026
CRefocus	-.352	.075	-.142	-4.660	.000	-.141	-.142	-.142
3 (Constant)	9.656	1.296		7.449	.000			
gender	4.455	1.683	.295	2.648	.008	.023	.081	.080
CRefocus	-.128	.117	-.051	-1.091	.275	-.141	-.034	-.033
GndrCrefocu	-.379	.151	-.295	-2.507	.012	-.042	-.077	-.076

Data from the test for the interaction between the CERQ Positive Refocus subscale and gender, with the BDI-II as the dependent variable.

a. Dependent Variable: BeckT

REGRESSION Model: 4.455 (Gender) - .238 (CRefocus) - .379 (Gender X Refocus) + 9.656 = BeckT.

Results

Across the 18 emotion regulation subscales, in the three emotion regulation inventories, interactions between emotion regulation and gender predicting, the number and severity of depression symptoms, involved three subscales. The data indicates that two of the three subscales involved the Cognitive Emotion Regulation Questionnaire (CERQ). One of the subscales involved the 20 Item Toronto Alexithymia Scale. There were no interactions found between emotion regulation and gender to predict the number and severity of depression symptoms in the Difficulties in Emotion Regulation Scale. Therefore, it seems as though, in answer to the first research question, the domains of emotion regulation that interact with gender in predicting the number and severity of depression symptoms are the alexithymic and cognitive domains of emotion regulation. The products from our statistical analyzes seem to indicate that

the largest proportion of variance accounted for in emotion regulation, is in the domain of

cognitive processing, which answers the second research question regarding which emotion

regulation domain involves the most problem and coping constructs that, in turn interact with

gender to predict depression.

CERQ RFocus

One interaction involving gender was found with the Cognitive Emotion Regulation

Questionnaire strategy of "cognitive refocus." Cognitive Refocus refers to focusing ones

thoughts on something positive, or some way to improve the situation that is distressing. There

was a more dramatic inverse relationship between the number and severity of depression

symptoms and one's constructive refocus of attention on problem solving for women compared

to men. In other words this coping strategy was more problematic for women to engage in/was

used less as their depression increased. This relationship is shown in Figure 1.

CERQ Rumination

The second interaction involving the Cognitive Emotion Regulation Questionnaire is seen

between depression symptoms and severity and maladaptive rumination. In general higher levels

of obsessive rumination as an emotion regulation strategy relate to higher levels of depression

symptoms. However, the positive correlation shows an increase at a much more dramatic rate

for men as compared to women. Whether this maladaptive technique increases depression or

depression increases the use of this maladaptive technique is hard to say. What is certain,

however, is that there is a strong relationship between depression symptoms and severity and

maladaptive rumination in men compared to women. This relationship is shown in Figure 2.

TAS-20 Difficulty Identifying Feelings

      The third subscale displaying an interaction between gender was found with the 20 Item Toronto Alexithymia Scale. Figure 3 is the visual representation of the number and severity of men's depression symptoms. It shows that men's depression symptoms have a more pronounced relation to the inability to identify feelings relative to women. While there is a positive correlation between women having difficulties identifying their feelings and depression scores, the relationship is more severe between men having difficulties identifying their feelings and their depression scores.
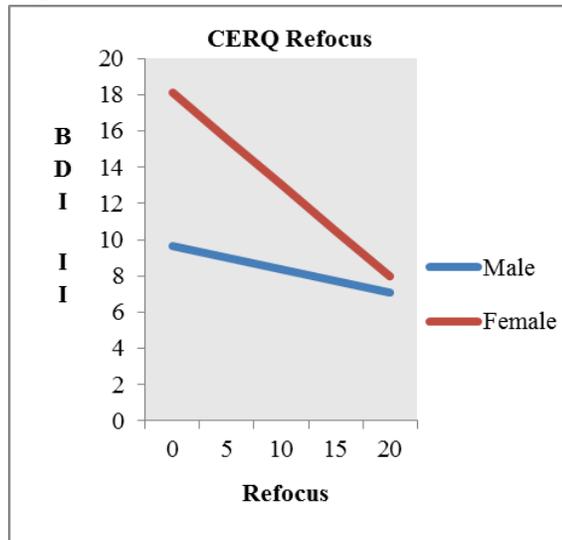
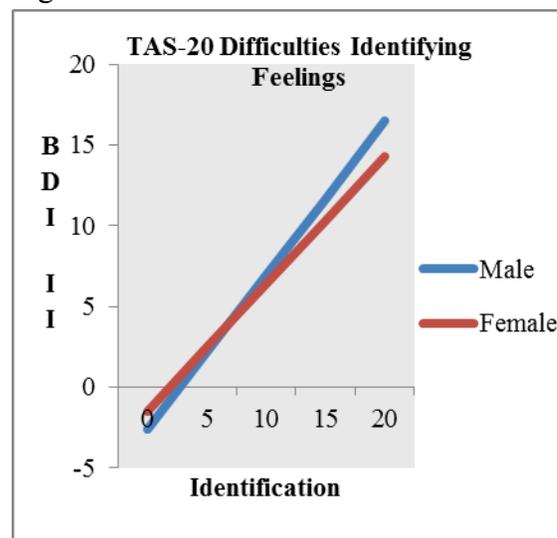Figure 1   Figure 2
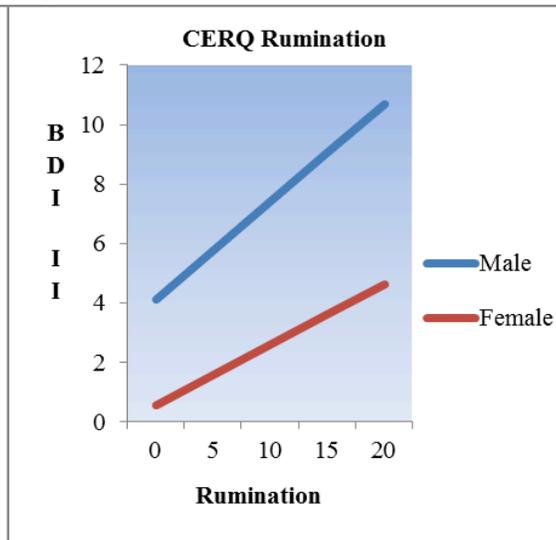
Figure 3

a. Three interactions found in two emotion regulation questionnaires

Conclusion & Discussion

If the CERQ is an exhaustive and valid measure of cognitive emotion regulation, and our sample is representative of the population, we can conclude that cognitive coping shows more gender differences in the domain of depression. While men and women are more or less similar in other areas of emotion regulation they have slightly different cognitive problem solving and coping strategies (Figure 1 & 2, Table 2 & 3). Specifically, as men's depression scores increase the maladaptive coping strategy of rumination increased as well, while the effect of rumination was not displayed as strongly in women. However when women do not positively refocus, their depression scores increase much more dramatically than men who do not refocus on planning. On the other hand as depression increases for men, relative deficits in the ability to identify feelings are more apparent for them compared to women.

Despite these differences in the use of these emotion regulation techniques, men and women are using the same empirically based emotion regulation techniques (Gratz, & Roemer, 2004; Kelly, Tyrka, Price, & Carpenter, 2008).   These findings support the practical application of these emotion regulation inventories. On the other hand, it seems clear that our clinical approach to depression may need to be slightly altered depending on the gender of our client. It seems clear that in therapy, one might profitably focus on assisting men in eliminating rumination cognitions (referring to constantly thinking of the negative event and the thoughts and feelings associated with it). As other research suggests one may want to focus on helping women cultivate the skill of positively refocusing (or thinking about what steps to take in order

to deal with the effects of the event). Part of this includes helping them cultivate the belief that they have the ability to change their surroundings and circumstances (Kuehner, 2003).

As has been noted, the central conclusion of the present study is that men and women differ in the degree to which their affirmation of using certain emotion regulation strategies varies as their depression symptoms increase, in a college-age sample. The study is unique in its examination of a very broad range of emotion-regulation problems and strategies, as well as a use of a large sample size. The study has implications for the further study of how premorbid emotion regulation and coping may vary in men and women who are prone to depression, and it invites consideration of how psychotherapy treatments might differentially emphasize particular emotion regulation skills in therapy.

The present study also differed with the results of recent work by Blalock & Joiner (2000). Using a sample a size of 179, they found an interaction involving the subscale of "acceptance" (referring to thoughts of resigning to what has happened) and gender, however, no such interaction was found in the present study. One reason for the difference in findings may be that the sample in the present study is much larger than that used by Blalock & Joiner (2000) (179 versus 1045 in this study). In addition to the dramatic sample size difference as an explanation of differences between the studies, another explanation could involve culture. While our study, as well as Blalock & Joiner (2000), was conducted in the United States, our study took place in a "Western" region of the country, while their study was conducted in the U.S. "South." Thus, there are very likely significant cultural differences in these two regions.

The present study provides a template for describing which emotion regulation skills and deficiencies most strongly relate to depression symptoms and severity. Also, the results of the

present study show that though men and women use the same emotion regulation methods, they may rely on them to different degrees as their depression symptoms increase. Garnefski and Kaaji (2006) have also suggested a configuration of emotion regulation styles and strategies, or "template" that may be used to address this question, their research was conducted in the Netherlands. Cultural differences may effect whether or not the same template is applicable for depressed persons in the United States. Another limitation may be that Ganefski and Kaaji (2006) used only the Cognitive Emotion Regulation Questionnaire to assess emotion regulation strategies which was then in turn used to assess multiple correlations with depression symptoms.

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