

FAMILY EMOTIONAL ENVIRONMENT AND EMOTION REGULATION:  
DIFFERENTIATING LINKS TO OBSESSIVE-COMPULSIVE DISORDER, DEPRESSION,  
AND THEIR CO-OCCURRENCE

by

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(Under the Direction of Cynthia Suveg)

ABSTRACT

Obsessive-Compulsive Disorder (OCD) is frequently comorbid with depression (Crino & Andrews, 1996) and the combination of these disorders may result in additional impairment compared to the difficulties of only one of the disorders (Peris et al., 2010). Although there is an abundance of literature examining these groups separately in relation to predictors and associated impairment, little is known about their emotion-related impairments. Research suggests that how emotions are expressed in the family may contribute to emotion regulation difficulties in both OCD and depressed groups (Goodman & Gotlib, 1999; Silk, Shaw, Forbes, Lane, & Kovacs, 2006). Therefore, this study's goal was to examine whether aspects of emotion regulation and the family emotional environment could differentiate college-aged students with OCD, depression, and their comorbidity using a multinomial logistic regression approach.

INDEX WORDS: Emotion regulation, Emotion, OCD, Depression, Comorbidity

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M.A., Eastern Illinois University, 2011

A Thesis Submitted to the Graduate Faculty of The University of Georgia in Partial Fulfillment  
of the Requirements for the Degree

MASTERS OF SCIENCE

ATHENS, GEORGIA

2014

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## CHAPTER 1

### INTRODUCTION

#### Purpose of the Study

The purpose of this study was to understand whether, and if so, how early family emotional expressivity and current emotion regulation difficulties differentially relate to OCD, depression, and the comorbidity of these disorders in a college-aged sample. This study contributed to the extant literature by informing conceptual models of these disorders. This study also had clinical implications by facilitating treatment decisions in relation to diagnostic presentation of OCD, depression, or their comorbidity.

#### How This Study is Original

This study is original because it compares groups that have not been differentiated previously in relation to early family emotion expressivity and current emotion regulation. This study also examines specific facets of emotion regulation difficulties that have yet to be examined in relation to these groups.

#### Expected Results

Based on the empirical and theoretical literature (Eisenberg, Cumberland, & Spinrad, 1998; Morelen, Jacob, Suveg, Jones, & Thomassin, 2013; Silk, Shaw, Forbes, Lane, & Kovacs, 2006), it was expected that the depression and comorbid groups would be characterized by greater levels of negative family emotion expressivity than the OCD group. It was also expected that the OCD group would be characterized by greater levels of positive family emotional

expressivity than the comorbid and depression groups, considering this group does not meet criteria for depression (i.e., extreme sadness). The comorbid group was expected to demonstrate a greater breadth and intensity of emotion regulation difficulties relative to the OCD and depression groups. Regarding the differentiation of the OCD and the depression group, the following hypotheses were offered:

- Concerning awareness of emotional experiences (e.g., paying attention to emotions, acknowledging one's own emotions), it was hypothesized that difficulties with awareness would be more characteristic of the OCD group due to the tendency for depressed individuals to ruminate and focus on their emotions whereas adults with OCD may engage in compulsions outside of their awareness and therefore may not be aware of the emotions associated with the obsessions and/or compulsions.
- Both groups demonstrate difficulties with goal-directed behaviors (Fernandez de la Cruz et al., 2013), such as difficulty concentrating or getting work done when upset; however, due to the hopelessness, loss of energy, and loss of interest in daily activities that adults with depression experience, it was hypothesized that difficulties with goal-directed behaviors would be more strongly characteristic of depression.
- Because adults with OCD have difficulty resisting urges and compulsions whereas adults with depression have difficulties engaging in simple, daily tasks, it was expected that impulse control difficulties (e.g., difficulty controlling behaviors or losing control when upset) would be characteristic of OCD rather than depression.
- The OCD group was hypothesized to be characterized by more nonacceptance of emotional experiences (e.g., feeling ashamed for feeling a certain way) relative to the depression group. Although nonacceptance has been linked to both groups, one study



demonstrated the presence of this difficulty (more specifically, getting angry with oneself) in an OCD group versus a depression group (Belloch, Morillo, & Garcia-Soriano, 2009).

- Because adults with OCD have demonstrated more use of cognitive reappraisal compared to adults with depression (Belloch, Morillo, & Garcia-Soriano, 2009) and because adults with depression tend to ruminate on their emotions as opposed to trying to change them, it is hypothesized that difficulty accessing emotion regulation strategies (e.g., wallowing, not knowing how to make oneself feel better, believing it will take a long time to feel better) would be more characteristic of the depression group compared to the OCD group.
- In regards to clarity of emotional experiences (e.g., not understanding how one is feeling, difficulty making sense of emotions), extant literature has shown this aspect of emotion regulation to be related to both OCD and depression (Campbell-Sills et al., 2006; Fernandez de la Cruz et al., 2013; Rude & McCarthy, 2003). In particular, individuals with OCD may have difficulty understanding how their emotions relate to obsessions and compulsions, and depressed individuals may become overwhelmed with emotions and not able to differentiate them. Therefore, this hypothesis was exploratory in nature.

### Literature Review

Obsessive-Compulsive Disorder (OCD), a disorder characterized by intrusive thoughts, ideas, or images (obsessions) and repetitive, time-consuming behaviors aimed at reducing anxious feelings (compulsions) (American Psychiatric Association, 2000), affects approximately 2-3% of the population (Rasmussen & Eisen, 1992). Despite the low prevalence rate, OCD is known to be frequently comorbid with other, more common disorders, especially depression; approximately half of adults diagnosed with OCD are also diagnosed with depression at some

point during the diagnosis (Crino & Andrews, 1996). The combination of these disorders may result in additional impairment compared to the difficulties of only one of the disorders (Peris et al., 2010) and is associated with poorer treatment outcome (Abramowitz, 2004). Although there is an abundance of literature examining these groups separately in relation to predictors and associated impairment, little is known about their combined effects, especially in the realm of emotion-related functioning.

Individuals with both OCD and depression exhibit difficulties in emotion regulation, which is the ability to process and modify emotional experiences in order to achieve one's goal (Thompson, 1994). Emotion regulation develops in part via both temperamental influences and emotion parenting (Morelen, Jacob, Suveg, Jones, & Thomassin, 2013; Silk, Shaw, Forbes, Lane, & Kovacs, 2006). With respect to emotion parenting, the early family emotional environment can have subsequent effects on a person's ability to understand and cope with emotions (Eisenberg et al., 1998). Research suggests that factors within the emotional family environment may indeed contribute to emotion regulation difficulties in both OCD and depressed groups (Goodman & Gotlib, 1999; Silk et al., 2006). Few studies, however, have examined the groups in tandem on measures of family emotional environment and emotion regulation. Examination of family emotional expressivity and emotion regulation in groups of individuals with OCD, depression, and their comorbidity may help to identify differential relations between these facets and the disorders thus contributing to conceptual models of the disorders and clinical considerations. Therefore, the goal of this study was to understand whether and if so, how early family emotional expressivity and current emotion regulation difficulties differentiate OCD, depression, and the comorbidity of these disorders.

## **Family Emotional Expressivity in OCD and Depression**

Parents' approaches to encouraging/facilitating emotional development in youth have been shown to significantly related to OCD and depression (e.g., Aycicegi, Harris, & Dinn, 2002; Burkhouse, Uhrlass, Stone, Knopik, & Gibb, 2012). One way in which parents shape emotional development is through emotional expressivity. Children tend to interpret potentially threatening information via their parents' reactions to information (Barrett, Rapee, Dadds, & Ryan, 1996). Therefore, if a parent reacts in a particularly negative way to stimuli, the child is likely to respond in a similar manner. Furthermore, if the child develops a pattern of negative responding such that this pattern is interfering or distressing, psychopathology, such as OCD, may develop. For example, if a family expresses much negative emotion such as disappointment or criticism in the home, an individual may begin to internalize these messages. This person may then become overly worried or obsessive about a myriad of things including performance, cleanliness, organization, symmetry etc., resulting in a potential diagnosis of OCD. One study examined children ages 9-18 years with OCD in relation to parental accommodation and affect. Of particular relevance to this review, increased levels of maternal negative affect, but not paternal negative affect was associated with OCD symptoms (Futh, Simonds, & Micali, 2012). Expressed emotion, characterized by criticism, hostility, and parental over-involvement, has also been linked extensively to OCD (e.g., Przeworski et al., 2012). In one study, two facets in particular, parental hostility and criticism were shown to relate to adult-onset OCD, with parental hostility being a stronger indicator (Van Noppen & Steketee, 2009). Similarly, Lennertz and colleagues (2010) found that compared to healthy controls, adults with purely OCD described their parents as less warm, more rejecting, and more controlling; similar findings have also been found by others (e.g., Aycicegi et al., 2002).

Goodman and Gotlib (1999) proposed that exposure to maternal negative and maladaptive cognitions, behaviors, and affect predisposes youth for depression. Children tend to model their parents' emotional and behavioral functioning (Bandura, 1986); thus, if a mother demonstrates a particularly negative pattern of emotional expressivity, the child is also likely to mimic these behaviors, which may put the child at risk for depression. Furthermore, when a mother tends to demonstrate more maladaptive behaviors and cognitions, there is an increased likelihood for negative interactions between the mother and child which may subsequently increase the child's likelihood of experiencing negative emotions (Goodman & Gotlib, 1999).

There is a vast amount of literature that examines family emotional expressivity and the link to depression, supporting Goodman and Gotlib's model (1999). In particular, parental negative affect (more specifically, less positive emotion and more negative emotion) has been related to child depressive symptoms (Lovejoy, Graczyk, O'Hare, & Neuman, 2000). Expressed emotion has also been linked to depressive symptoms. In one prospective study of women, ages 25-31 years, depressive symptoms were predicted by reported expressed emotion at age 10 (Lindelov, 1999). Specifically, these depressed women described their parents as high in irritability, hostility, and criticism, but low in positive comments and warmth. High levels of criticism have also been linked to depression in children ages 8-12 and adults over the age of 60 years (Burkhouse et al., 2012; Hinrichsen & Pollack, 1997).

When OCD and depression co-occur, similar findings emerge. In a study of adults with OCD-only and comorbid OCD and Major Depressive Disorder (MDD), the comorbid group described their parents as less warm, more rejecting, and more controlling compared to non-disordered adults, as did the OCD-only group (Lennertz et al., 2010). However, there were no significant differences between the OCD-only group and the OCD/MDD group, demonstrating

that perhaps there is something unique about familial factors associated with OCD. When comparing outpatients with OCD to outpatient adults with depression or dysthymia, the OCD group reported higher levels of maternal caring than the depressed group (Myhr, Sookman, & Pinard, 2004). In summary, when comparing family expressivity in adults with OCD and depression, differences are evident (e.g., Lennertz et al., 2010; Myhr et al., 2004). Differences in rejection, criticism, hostility, and lack of caring likely represent a home environment characterized by high levels of negative affect expression, although negative affect was not measured directly in these studies; more research is needed to understand how expressivity differentiates adults with one of these disorders versus the combination of these disorders.

### **Emotion Regulation in OCD and Depression**

Adults with OCD have been shown to have deficits in a variety of domains within emotion regulation. In one study using the Difficulties in Emotion Regulation Scale (DERS; Gratz & Roemer, 2004), adults with OCD reported more nonacceptance of emotions, impulse-control difficulties, limited access to emotion regulation strategies, lack of emotional clarity, and difficulties with goal-directed behaviors in comparison to a healthy control group (Fernandez de la Cruz et al., 2013). Compared to a healthy control group, adults with OCD reported focusing on other concerns (i.e., worrying) and blaming themselves for having intrusive thoughts as means of emotion regulation (Abramowitz, Whiteside, Kalsy, & Tolin, 2003). The authors noted that focusing on other thoughts and self-blame likely lead to suppression of thoughts, resulting in further emotional distress. The OCD group reported using less distraction compared to the control group and fewer instances of talking with other people about intrusive thoughts. Obsessive symptoms have also been linked to thought suppression, an unhelpful method of emotion regulation (Wegner & Zanakos, 1994). Adults with OCD have also reported more fear

of negative emotion (Holoway & Heimberg, 2003) compared to healthy controls, possibly indicating maladaptive beliefs about and difficulties regulating negative emotions. In a treatment study examining the effects of teaching emotional acceptance to adults with OCD, a negative correlation was found between acceptance of thoughts and feelings and OCD symptoms (Allen & Barlow, 2009). Specifically, decreases in thought suppression and increased acceptance of emotions were related to improvements in OCD symptoms, demonstrating that emotion regulation skills need improvement in this population.

Emotion regulation deficits have also been demonstrated in depressed samples. Similar to OCD samples, symptoms of depression correlated with reports of increased emotion suppression and decreased cognitive reappraisal in college students (Gross & John, 2003). In another study examining 73 undergraduates, students with a history of depression reported less acceptance of emotions than students without a history of depression (Ehring, Tuschen-Caffier, Schnulle, Fischer, & Gross, 2010), results which have been replicated elsewhere (e.g., Campbell-Sills, Barlow, Brown, & Hofmann, 2006). Furthermore, during a film clip, students with a history of depression demonstrated more thought suppression compared to a never-depressed group. Thought suppression has been related to depressive symptoms in other studies as well (e.g., Campbell-Sills et al., 2006; Rude & McCarthy, 2003). Other aspects of emotion regulation have also been linked to depressive symptoms compared to healthy-adult controls, such as rumination, catastrophizing, self-blame, positive reappraisal, and positive refocusing, with the latter two being negatively related to depression (Garnefski & Kraaij, 2006). One aspect of emotion regulation, clarity of emotional experiences, has shown variable results compared to healthy, non-disordered adult groups (Campbell-Sills et al., 2006; Rude & McCarthy, 2003).

When differentiating emotion regulation styles between OCD and depression, few studies compare these groups directly. When demonstrating strategies specific to OCD in adults compared to adults with depression, getting angry at oneself was unique to the OCD group (Belloch, Morillo, & Garcia-Soriano, 2009). The OCD group also reported using cognitive reappraisal more than the depressed group. Abramowitz and colleagues (2007) demonstrated that adults with comorbid OCD and depression were more likely to interpret obsessions negatively and overestimated the importance of their thoughts compared to adults with OCD-only. Avoidance has also been found to be characteristic of depression severity in adults with comorbid OCD and depression (Yap, Morgan, & Kyrios, 2012). These results reveal that although plenty is known about emotional functioning in adults diagnosed with OCD and depression, little is known about how early emotional expressivity and specific emotion regulation strategies differentiate OCD, depression, and their comorbidity.

### Goals and Hypotheses

The goal of this study was to examine differential relationships between family emotional environment, emotion regulation difficulties, and OCD, depression, and their co-occurrence. Understanding these differential relationships will inform conceptualizations of these often comorbid disorders and may have clinical implications. A multinomial logistic regression (MNL) approach was utilized to test these relationships which may potentially differentiate OCD, OCD and depression, and a depression group in a community sample of college-aged students.

Based on the empirical and theoretical literature (Eisenberg, Cumberland, & Spinrad, 1998; Morelen, Jacob, Suveg, Jones, & Thomassin, 2013; Silk, Shaw, Forbes, Lane, & Kovacs, 2006), it was expected that the depression and comorbid groups would be characterized by

greater levels of negative family emotion expressivity than the OCD group. It was also expected that the OCD group would be characterized by greater levels of positive family emotional expressivity than the comorbid and depression groups, considering this group does not meet criteria for depression (i.e., extreme sadness). The comorbid group was expected to demonstrate a greater breadth and intensity of emotion regulation difficulties than the OCD and depression groups. Regarding the differentiation of the OCD and the depression group, the following hypotheses were offered:

- Concerning awareness of emotional experiences (e.g., paying attention to emotions, acknowledging one's own emotions), it was hypothesized that difficulties with awareness would be more characteristic of the OCD group due to the tendency for depressed individuals to ruminate and focus on their emotions whereas adults with OCD may engage in compulsions outside of their awareness and therefore may not be aware of the emotions associated with the obsessions and/or compulsions.
- Both groups demonstrate difficulties with goal-directed behaviors (Fernandez de la Cruz et al., 2013), such as difficulty concentrating or getting work done when upset; however, due to the hopelessness, loss of energy, and loss of interest in daily activities that adults with depression experience, it was hypothesized that difficulties with goal-directed behaviors would be more strongly characteristic of depression.
- Because adults with OCD have difficulty resisting urges and compulsions whereas adults with depression have difficulties engaging in simple, daily tasks, it was expected that impulse control difficulties (e.g., difficulty controlling behaviors or losing control when upset) would be characteristic of OCD rather than depression.



- The OCD group was hypothesized to be characterized by more nonacceptance of emotional experiences (e.g., feeling ashamed for feeling a certain way) relative to the depression group based on the extant literature. Although nonacceptance has been linked to both groups, one study demonstrated the presence of this difficulty (more specifically, getting angry with oneself) in an OCD group versus a depression group (Belloch, Morillo, & Garcia-Soriano, 2009).
- Because adults with OCD have demonstrated more use of cognitive reappraisal compared to adults with depression (Belloch, Morillo, & Garcia-Soriano, 2009) and because adults with depression tend to ruminate on their emotions as opposed to trying to change them, it was hypothesized that difficulty accessing emotion regulation strategies (e.g., wallowing, not knowing how to make oneself feel better, believing it will take a long time to feel better) would be more characteristic of the depression group compared to the OCD group.
- In regards to clarity of emotional experiences (e.g., not understanding how one is feeling, difficulty making sense of emotions), extant literature has shown this aspect of emotion regulation to be related to both OCD and depression (Campbell-Sills et al., 2006; Fernandez de la Cruz et al., 2013; Rude & McCarthy, 2003). In particular, individuals with OCD may have difficulty understanding how their emotions relate to obsessions and compulsions, and depressed individuals may become overwhelmed with emotions and not able to differentiate them. Therefore, this hypothesis was exploratory in nature.

## CHAPTER 2

### METHOD

#### Participants

The initial pool of participants consisted of 704 college-aged students in a large southern university, ranging in ages 18-24 ( $M$  age = 19.48 years,  $SD$  = 1.22). The sample was 64% female. Concerning race, 81.1% of students identified themselves as Caucasian, 7.2% as African American, 7.7% as Asian, 2.3% as Hispanic, and 1.7% as “other.” The majority of parents of these students were married (77.8%); 17.1% of students reported that their parents were divorced. The majority of the sample also indicated that their parents had at least a college degree (68.9% for mothers and 69.4% for fathers).

#### Procedures

Participants volunteered for this study as part of a class requirement in which they volunteered to participate in research studies or write short papers. The study was administered online using Survey Monkey, which is an online survey provider. All procedures were in accordance with The University of Georgia’s Institutional Review Board.

#### Measures

##### **Clinical Symptoms**

The Symptom Checklist-90-Revised (SCL-90-R; Derogatis, 1994) is a 90-item measure that assesses clinical symptoms in adults. Participants were instructed to rate the frequency of symptoms on a five-point Likert scale (0 = *not at all* to 4 = *extremely*). The subscales of the SCL-90-R have shown adequate reliability and validity (Derogatis, 1994). For this study, two

subscales were used: the obsessive-compulsive scale (10 items) and depressive symptoms scale (13 items). The two subscales demonstrated adequate internal consistency, .83 and .88, respectively. In order to ensure a more clinically-distressed sample, the obsessive-compulsive subscale score was calculated using the four of the items believed to be the most face-valid of an OCD diagnosis (i.e., “repeated unpleasant thoughts that won’t leave your mind,” “having to do things very slowly to insure correctness,” “having to check and double-check what you do,” and “having to repeat the same actions such as touching, counting, or washing,”  $\alpha = .72$ ).

For the purposes of this study, participants were grouped into three groups based on a cut-off t-score of 65. Participants with an obsessive-compulsive score above 65 but depressive score below 65 were in the OCD group ( $N = 58$ ). Participants with an obsessive-compulsive score below 65 but depressive score above 65 were in the depression group (DEP;  $N = 70$ ). Participants with both scores above 65 were in the comorbid group (OCD-D;  $N = 71$ ). All other participants were excluded from analyses.

### **Family Emotional Expressivity**

The Family Expressiveness Questionnaire (FEQ; Halberstadt, 1986) is a 40-item measure of positive and negative expressiveness in the home. Participants were instructed to complete this measure retrospectively, that is, to rate items in accordance to emotional expressiveness that occurred in their childhood home.. The FEQ requires participants to rate items according to how frequently they occurred in the family on a nine-point Likert scale (1 = *not at all in my family* to 9 = *very frequently in my family*). The FEQ has two subscales: positive expressiveness (e.g., “thanking family members for something they have done”) and negative expressiveness (e.g., “putting down other people’s interests”); both scales were used in this study. This measure has been shown to have good psychometric properties with internal consistency ranging from .75 to

.88 for both subscales and test-retest reliability ranging from .89 to .91 (Halberstadt, 1986). In this study, internal consistency for the positive and negative expressiveness subscales were .93 and .84, respectively.

### **Emotion Regulation**

The Difficulties in Emotion Regulation Scale (DERS; Gratz & Roemer, 2004) is comprised of 36-items, which tap specific types of emotion regulation difficulties. Items were answered on a five-point Likert scale based on how frequently an item applies to their current emotion regulation skills (1 = *almost never* to 5 = *almost always*). The DERS has six subscales, where higher scores indicate greater difficulties: Nonacceptance (e.g., “When I’m upset, I become angry with myself for feeling that way”), Goals (e.g. “When I’m upset, I have difficulty concentrating”), Impulse (e.g. “I experience my emotions as overwhelming and out of control”), Awareness (e.g., “I do not pay attention to how I feel”), Strategies (e.g., “When I’m upset, I believe that there is nothing I can do to make myself feel better”), and Clarity (e.g., I have no idea how I am feeling). This measure has demonstrated good psychometric properties, including internal consistency and construct validity (Gratz & Roemer, 2004). Internal consistency for the six subscales ranged from .83 to .89.

### Statistical Analyses

First, group differences on demographic variables (i.e., sex, age, ethnicity, family income) were determined using chi-square tests of independence to determine if any of these variables should be accounted for during the MNLN analyses. Then, a series of five MNLN equations were conducted to differentiate between the (1) OCD and depression group, (2) OCD and comorbid group, and (3) depression and comorbid group. The first set of equations included the FEQ positive and FEQ negative expressivity subscales as independent variables. The

remaining four equations were based on the theoretical conceptualization of emotion regulation as presented by Gratz and Roemer (2004) in their validation of the DERS. The equations were as follows: (1) DERS lack of emotional awareness and difficulties with clarity of emotional experience as independent variables differentiating diagnostic status (dependent variable), (2) DERS impulse-control and difficulty in goal-directed behaviors as independent variables differentiating diagnostic status, (3) nonacceptance of emotions as an independent variable differentiating diagnostic status, and (4) difficulty accessing emotion regulation strategies as an independent variable differentiating diagnostic status.

When chi-square analyses determined group differences based on demographics, exploratory analyses were conducted to determine whether these demographics moderated all possible relationships between 1.) positive and negative family expressivity and diagnostic group membership, and 2.) emotion regulation difficulties and diagnostic group membership. The publicly available PROCESS macro (<http://www.afhayes.com>) was used to conduct diagnostic group comparisons (outcome variables) to determine whether the independent variables (expressivity and emotion regulation) interacted with the moderator variable(s) (i.e., demographic variables).

## CHAPTER 3

### RESULTS

#### Preliminary Analyses

Chi-square tests of independence or ANOVAs were conducted to investigate group differences on categorical and quantitative demographic variables, respectively. No differences were found on race/ethnicity, age, parent's household income, or parent's current marital status. Differences were found on sex such that there was a significant relationship between sex and diagnostic group,  $X^2$ , (3,  $N = 694$ ), = 16.77,  $p = .001$ ; 65% of participants in the comorbid group were female compared to 43% in the depression group,  $X^2$ , (1,  $N = 141$ ), = 6.82,  $p = .009$ . In addition, there were sex differences between the OCD and depression group such that 74% of participants in the OCD group were female compared to 43% in the depression group,  $X^2$ , (1,  $N = 128$ ), = 12.67,  $p < .001$ . Therefore, sex was included as a covariate in all analyses. In addition, exploratory analyses using sex as a moderator between main study variables (i.e., expressivity and emotion regulation) and diagnostic status were conducted. When moderation was significant, the regression coefficient for the interaction term was listed on Table 3.1.

#### Primary Analyses

##### **Family Emotional Expressivity**

A MNL equation was conducted to determine whether the FEQ positive and negative emotional expressivity subscales differentiated among the groups (OCD vs. DEP, OCD vs. OCD-D, DEP vs. OCD-D) (see table 3.2). The FEQ positive emotional expressivity subscale, FEQ negative emotional expressivity subscale, and sex were entered into each comparison (see

Table 1). The positive expressivity subscale did not differentiate the single-disordered groups from the comorbid group or the OCD group from the DEP group. However, positive family emotional expressivity and sex interacted in differentiating the OCD group from the DEP group. More specifically, for females, low levels of positive family emotional expressivity was more predictive of being in the DEP group, but not the OCD group, relative to high levels of positive family emotional expressivity (female OR at low levels: 13.87; female OR at high levels: 0.87,  $p = .007$ ). The negative expressivity subscale did not differentiate the single-disordered groups from the comorbid group or the OCD group from the DEP group. Sex did differentiate the OCD-D group from the DEP group and the OCD group from the DEP group such that females were more likely to be in the OCD-D group compared to the DEP group, and females were more likely to be in the OCD group compared to the DEP group.

### **Emotion Regulation**

In the next set of MNL equations, difficulties with emotional awareness, difficulties with emotional clarity, and sex were entered as the independent variables. More difficulties with emotional clarity significantly differentiated the OCD-D group from the OCD group. For every unit increase in difficulty with emotional clarity, the odds of being in the OCD-D group relative to the OCD group increased by 30%. Neither difficulties in emotional awareness nor sex distinguished the OCD-D group from the OCD group. When comparing the DEP and the OCD-D group, more difficulties in emotional awareness, fewer difficulties with emotional clarity, and sex significantly differentiated the DEP group from the OCD-D group; for every unit increase in difficulty with emotional awareness, the odds of being in the DEP group relative to the OCD-D group increased by 10%, and for every unit increase in difficulty with emotional clarity, the odds of being in the OCD-D group increased by 17% relative to the DEP group. Females were more

likely to be in the OCD-D group than the DEP group. Neither difficulties with emotional awareness nor lack of emotion clarity significantly differentiated the OCD versus the DEP group, however, sex was a significant predictor such that females were more likely to be in the OCD group.

In the next set of MNL equations, impulse-control difficulties, difficulties engaging in goal-directed behaviors, and sex were entered as independent variables. Impulse-control difficulties, more difficulties in goal-directed behaviors, and sex significantly differentiated the OCD-D group from the OCD group; for every unit increase in impulse-control difficulties, the odds of being in OCD-D group increased by 21%, and for every unit increase in difficulties in goal-directed behaviors, the odds of being in the OCD-D group increased by 10%. Females were more likely to be in the OCD than the OCD-D group. In distinguishing DEP versus OCD-D, neither impulse-control difficulties, nor difficulties in goal-directed behaviors significantly distinguished the groups. Sex was also not a significant predictor in distinguishing the DEP and OCD-D group. However, difficulties in goal directed behaviors and sex interacted in differentiating the OCD-D group from the DEP group. For males, high levels of difficulties in goal directed behaviors were more predictive of being in the OCD-D group, but not the DEP group, relative to low levels of difficulties in goal directed behaviors (male OR at low levels: 0.22; male OR at high levels: 2.56,  $p = .003$ ). When comparing the DEP and the OCD group, more impulse-control difficulties and sex significantly differentiated the DEP group from to the OCD group; for every one unit increase in impulse-control difficulties, the odds of being in the DEP group increased by 15% relative to the OCD group. Females were more likely to be in the OCD than the DEP group. Difficulties in goal-directed behaviors did not significantly distinguish these groups.



In the next set of MNL equations, nonacceptance of emotional experience and sex were entered as independent variables. When comparing the OCD and OCD-D groups, more nonacceptance of emotional experience significantly differentiated the OCD-D group from the OCD group. For every unit increase in nonacceptance of emotional experience, the odds of being in the OCD-D group increased by 10%; sex was not significant in distinguishing these groups. When comparing the OCD-D and DEP groups, more nonacceptance of emotional experience and sex significantly differentiated the OCD-D group from the DEP group; for every unit increase in nonacceptance of emotional experience, the odds of being in the OCD-D group increased by 8%. Females were more likely to be in the OCD-D group than the DEP group. When comparing the OCD and DEP groups, nonacceptance of emotional experience did not significantly distinguish the OCD from the DEP group, but sex was significant such that females were more likely to be in the OCD group than the DEP group.

In the next set of MNL equations, difficulties accessing emotion regulation strategies and sex were entered as independent variables. When comparing OCD-D versus the OCD group, more difficulties accessing emotion regulation strategies significantly differentiated the OCD-D group from the OCD group. For every unit increase in difficulties accessing emotion regulation strategies, the odds of being in OCD-D group increased by 26%; sex did not significantly distinguish these groups. When comparing the OCD-D versus the DEP group, more difficulties accessing emotion regulation strategies significantly differentiated the OCD-D group from the DEP group. For every unit increase in difficulties accessing emotion regulation strategies, the odds of being in the OCD-D group increased by 9%; sex was not significant in distinguishing these groups. When comparing the DEP versus OCD groups, more difficulties accessing emotion regulation strategies and sex significantly differentiated the DEP group from

the OCD group; for every unit increase in difficulties accessing emotion regulation strategies, the odds of being in the DEP group increased by 16%. Females were more likely to be in the OCD group than the DEP group.

## CHAPTER 4

### DISCUSSION

The purpose of this study was to understand whether, and if so how, early family emotional expressivity and current emotion regulation difficulties differentially relate to OCD, depression, and the comorbidity of these disorders in a college-aged sample. Extant literature has examined these groups separately, primarily compared to healthy, non-disordered adults (Abramowitz et al., 2003; Burkhouse et al., 2012; Hinrichsen & Pollack, 1997) and therefore little is known about direct comparisons of these groups. In addition, family emotional expressivity has not been examined directly in these populations; rather, other constructs (e.g., parenting style) have been examined in which the types of expressivity is inferred (Lindelov, 1999; Myhr et al., 2004). Understanding early family emotional expressivity and current emotion regulation difficulties will ultimately inform conceptual models of these disorders and inform treatment decisions. Overall, family emotional expressivity did not differentiate these groups. However, types of emotion regulation difficulties did. Severity of emotion regulation difficulties differentiated the OCD-D compared to the single-disordered groups. In addition, types of emotion regulation difficulties also significantly differentiated the OCD and DEP groups.

In relation to family emotional expressivity, it was hypothesized that the DEP and OCD-D groups would be characterized by more negative expressivity compared to the OCD group, and that the OCD group would be characterized by more positive affect compared to the DEP and OCD-D groups. In general, no differences between these groups were evident with the

exception that for females, low positive expressivity was more predictive of being in the DEP group relative to the OCD group. This finding is consistent with the tripartite model in which depression is characterized by low levels of positive affect (Brown, Chorpita, & Barlow, 1998; Chorpita, 2002; Clark & Watson, 1991). It is uncertain as to why this finding was only prominent in females; perhaps this phenomenon is related to emotion socialization processes that vary by sex. For example, females are thought to be more emotionally expressive than males (Simon & Nath, 2004) because as children, they are encouraged to express their emotions more than boys (Casey & Fuller, 1994). In addition, females are generally thought to place great value on intimacy and relationships (Brody, 1999; Brody & Hall, 2010), making them potentially more sensitive to emotional experiences. Collectively, through socialization, females may be more attuned to emotions at a young age and be more sensitive to their emotional environment compared to males.

The hypotheses that family expression of negative emotion would differentiate the OCD-D group from the OCD or DEP groups were not supported. Perhaps more specific early emotional experiences and emotions directed towards the child would differentiate these groups beyond family expressivity, such as parental validation of child's emotions, parental teaching of emotions, or specific parental psychopathology. However, in the only extant study examining differences between a comorbid OCD/MDD group and OCD-only group in relation to warmth, rejection, and parents as controlling (Lennertz et al., 2010), no significant differences were found. More research is needed to fully understand whether, and if so, how early family emotional experiences may differentiate these groups.

When comparing the OCD and DEP groups, it was hypothesized that the OCD group would have more difficulties with emotional awareness because depressed individuals tend to

ruminate or focus on their emotions whereas adults with OCD may engage in compulsions outside of their awareness. This hypothesis was unsupported. It could be that perhaps both groups spend considerable amounts of time focusing on their symptoms such that individuals with OCD worry about their symptoms and individuals with depression ruminate, indicating that worry and rumination are functionally the same. An unexpected difference emerged when differentiating the OCD-D and DEP group based on emotional awareness. In particular, the DEP group demonstrated more difficulties with emotional awareness than the OCD-D group. It could be that perhaps the OCD-D group, as a result of the worry and intrusive thoughts component of OCD, tends to be overly focused on their emotional experiences. For example, they may engage in worrying about worry (Wells & Papageorgiou, 1998) and worry about being sad. Therefore, perhaps the OCD-D group spends more time considering and conceptualizing their difficulties compared to the depression group, which may also focus more on their emotions compared to healthy controls, but still less than the comorbid group. Of note, previous research examining emotion awareness in individuals with OCD is mixed. For instance, Fernandez de la Cruz and colleagues (2013) found that when comparing an OCD group to healthy controls, differences were found on five of the six DERS subscales, the one exception being the lack of awareness subscale. However, other studies have shown lack of awareness as characteristic of the OCD group (e.g., Grabe et al., 2006; Kang, Namkoong, Woo Yoo, Jung, & Kim, 2012). Collectively, the inconsistent results across studies suggest that emotion awareness cannot reliably differentiate the DEP group from the OCD group.

As hypothesized, lack of emotional clarity, nonacceptance of emotion, and access to emotion regulation strategies differentiated the OCD and DEP groups from the OCD-D group, with the OCD-D group demonstrating more emotion regulation difficulties. Regarding lack of

emotional clarity, perhaps the OCD-D group has much more difficulty differentiating and understanding their emotions (i.e., emotional clarity) because of the added impairment and distress associated with two different sets of symptoms (i.e., obsessional thoughts/compulsions and depressive symptoms) relative to the single-disordered groups. In addition, previous studies have found that comorbid groups tend to have more difficulties in emotion-related functioning compared to single-disordered groups (e.g., Huppert, Simpson, Nissenson, Liebowitz, & Foa, 2009). Lack of emotional clarity may also lead one to feel frustrated. This frustration could in part explain the finding that nonacceptance of emotion differentiated the OCD-D group from the OCD and DEP groups. It may also be that the comorbid group has difficulty accepting the majority of their emotions. Individuals in the comorbid group must cope with both depressive and obsessive-compulsive symptoms; therefore, there may be more opportunities for them to become upset with oneself for their emotional experiences (i.e., less acceptance of emotions).

As hypothesized, the OCD-D group was differentiated from the OCD and DEP groups by exhibiting more difficulties accessing emotion regulation strategies. As with the other subscales that differentiated the OCD-D group from the single-disordered groups, having more difficulties accessing strategies may be a result of having two areas of psychopathology. More specifically, this group may experience confusion about which strategies to use, and when the strategy would be appropriate because of the range of negative emotions they are likely to experience. As hypothesized, the DEP group exhibited more difficulties in accessing emotion regulation strategies compared to the OCD group. This study adds evidence to extant literature that adults with depression tend to use a limited number of strategies, with rumination being primary (Garnefski & Kraaij, 2006). Although individuals with OCD tend to cope with their obsessions and related-emotions through engaging in compulsions, perhaps this population has more

flexibility and less helplessness than the DEP group, which leads them to try to engage in different strategies.

Another aspect of emotion regulation difficulties, impulse-control, differentiated the OCD-D from the OCD group, as expected with the OCD-D demonstrating more impulse-control difficulties; however, the OCD-D was not differentiated from the DEP group based on this subscale. Depression has been found to be related to impulse control difficulties and more specifically, impulse-control disorders (Lejoyeux, Arbaretaz, McLoughlin, & Ades, 2002). Therefore, the impulse-control difficulties may be related to the depression that is a component of both groups. In addition, although OCD is associated with compulsions, perhaps there is something fundamentally different between the constructs of impulsivity and compulsivity that would result in OCD not being characterized by impulse-control difficulties, as previous literature might suggest (Summerfeldt, Hood, Anthony, Richter, & Swinson, 2004). In particular, Summerfeldt and colleagues (2004) noted that impulsivity involves behaving in a potentially risky manner, not considering the potential consequence. In contrast, compulsivity is engaging in behavior to reducing some sort of anticipated harm or risk. Therefore, adults meeting criteria for OCD may be more risk-averse (i.e., less impulsive) than other disorders (i.e., the OCD-D group having less difficulties with impulse-control than the DEP group). The difference in impulsivity versus compulsivity may also explain why the DEP group exhibited more impulse-control difficulties compared to the OCD group. Impulsivity is usually characterized by engaging in risky behaviors; individuals with OCD, who typically seek to reduce risk and uncertainty, are not likely to engage in impulsive behaviors. In contrast, depression has been associated with impulsivity and a lack of foresight into consequences

(Lejoyeux et al., 2002), resulting in the DEP group being characterized by more impulse-control difficulties.

The OCD-D group was differentiated from the OCD group by demonstrating more difficulties in goal-directed behaviors, as predicted. Perhaps this finding emerged because of the combination of time-consuming obsessions and/or compulsions and rumination, low motivation, and energy from depression, which may also be time-consuming and result in low goal-attainment. Interestingly, when differentiating the OCD-D group from the DEP group, more difficulties with goal-directed behaviors predicted the OCD-D group, but only for males. Perhaps the addition of OCD symptoms to depression affects males more severely than females, resulting in the added impairment in males. Previous studies have noted that severity of an OCD diagnosis tends to be worse in males compared to females (Hanna, 1995; Fontenelle, Marques, & Versiani, 2002; Matsunaga et al., 2000), and that males tend to have more obsessions than females with OCD (Fontenelle et al., 2002). Therefore, meeting criteria for both OCD and depression may result in more disruptions in everyday activities and goals for males.

Contrary to predictions, nonacceptance of emotions, difficulties in engaging in goal-directed behaviors, lack of emotional clarity, and difficulties in emotional awareness did not differentiate the OCD from the DEP group. The abundance of extant literature that has found emotion regulation difficulties to be characteristic of OCD and depression has only examined OCD and depression separately compared to healthy controls (e.g., Abramowitz et al., 2003; Ehring et al., 2010; Rude & McCarthy, 2003). The current results suggest that although these groups have emotion-related difficulties compared to healthy controls, they do not in comparison to one another.



### Conclusions and Implications

This study contributes to the literature by differentiating OCD, depression, and their comorbidity on early family emotional expressivity and current emotion regulation variables. This study is the first to examine early family emotional expressivity and emotion regulation in distinguishing adults with OCD, depression, and the comorbidity of the two diagnoses. Although, in general, early family expressivity did not differentiate these groups, with the exception of females in predicting depression relative to OCD, this study demonstrates the potential of early emotional experiences predicting later psychopathology. In general, emotion regulation difficulties did differentiate diagnostic groups. This study demonstrates the additional emotion-functioning difficulties that are apparent in comorbid groups. Having this magnitude of emotion regulation difficulty may lead to impairment and difficulties in other areas of functioning, such as social and occupational functioning (Chi, Grandey, Diamond, & Krimmel, 2011; Lopes et al., 2011).

Although this study was the first to examine these groups and constructs in tandem, limitations are noted. First, clinical status was based on self-reported symptoms rather than a clinical interview. Future studies should utilize clinical populations using a clinical interview. Next, this study utilized a retrospective report of family emotional expressivity. While extant literature has used this method previously and has found it valid (Negy & Snyder, 2006; Yancura & Baldwin, 2009), our understanding of this topic area can be enhanced with the use of a longitudinal design. Research has also indicated that depressed individuals may be biased in their recollection of the past (e.g., Brewin, Andrews, & Gotlib, 1993; Koster, De Raedt, Leyman, & Lissnyder, 2010); however, individuals' perceptions and interpretations of their experiences shape behavior and influence development (Beck, 1976; Spiegler & Guevremont, 2010). This

study also did not differentiate whether OCD or depression developed first. This distinction might allow conclusions to be made about the specific additive effects the latter disorder.

This study may have clinical implications by facilitating treatment decisions in relation to diagnostic presentation of OCD, depression, or their comorbidity. Understanding the severity and associated impairments of these disorders is necessary for determining how and when treatment will be implemented. For example, clinicians need to decide how the frequent presence of depression in individuals with OCD may hinder any treatment gains when implementing treatment for OCD, especially considering that the comorbidity of these disorders was characterized by added emotion regulation difficulties. Therefore, the addition of an emotion regulation skills module during treatment may be warranted. Future research should examine the implications of emotion-related functioning in these disorders, especially when comorbid, and the relations to treatment outcome to better inform clinicians of appropriate treatment decision-making.

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Table 3.1

*Diagnostic Group Predictors among College-Aged Students*

Predictor Variable	Likelihood of Diagnosis Relative to OCD				Likelihood of Diagnosis Relative to DEP	
	DEP		OCD-D		OCD-D	
	Odds Ratio	95% CI	Odds Ratio	95% CI	Odds Ratio	95% CI
<u>Equation 1</u>						
Positive Expressivity	0.74	0.56-1.01	0.83	0.63-1.10	1.13	0.86-1.47
Negative Expressivity	1.15	0.80-1.66	1.33	0.93-1.88	1.15	0.82-1.61
Sex	0.26**	0.12-0.57	0.59	0.27-1.30	2.27*	1.13-4.55
Positive Express x Sex	0.82*					
<u>Equation 2</u>						
Emotional Awareness	1.07	0.97-1.16	0.96	0.87-1.05	0.90*	0.82-0.98
Emotional Clarity	1.11	0.97-1.27	1.30**	1.14-1.48	1.17*	1.04-1.32
Sex	0.24**	0.11-0.53	0.51	0.23-1.16	2.16*	1.05-4.43
<u>Equation 3</u>						
Impulse-Control	1.15*	1.03-1.29	1.21**	1.09-1.35	1.05	0.97-1.14
Goal-Directed Behaviors	1.02	0.94-1.11	1.10*	1.01-1.20	1.08	0.99-1.17
Sex	0.20**	0.09-0.45	0.34*	0.14-0.83	1.75	0.83-3.72
Goal-Directed x Sex					0.17*	
<u>Equation 4</u>						
Nonacceptance	1.03	0.95-1.10	1.10**	1.03-1.18	1.08*	1.01-1.15
Sex	0.25**	0.11-0.53	0.62	0.28-1.36	2.52*	1.24-5.14
<u>Equation 5</u>						
Accessing Strategies	1.16**	1.07-1.25	1.26**	1.16-1.36	1.09**	1.02-1.15
Sex	0.22**	0.10-0.49	0.43	0.18-1.00	1.96	0.96-4.03

Note. \* =  $p < .05$ ; \*\* =  $p < .01$ .

Table 3.2

*Means and Standard Deviations for Main Study Variables by Diagnostic Group*

<u>Variable</u>	<u>OCD</u>	<u>DEP</u>	<u>OCD-D</u>
Positive Expressivity	6.58 (1.10)	6.04 (1.17)	6.27 (1.50)
Negative Expressivity	4.68 (1.11)	4.68 (0.95)	4.92 (1.04)
Emotional Awareness	14.46 (5.22)	16.90 (5.09)	16.07 (4.73)
Emotional Clarity	10.14 (3.80)	11.61 (3.42)	13.04 (3.96)
Impulse-Control	9.24 (3.60)	10.97 (4.15)	13.06 (5.21)
Goal-Directed Behaviors	14.98 (5.11)	15.38 (4.33)	18.00 (5.10)
Nonacceptance	12.79 (5.42)	13.06 (4.82)	15.71 (6.27)
Accessing Strategies	14.52 (5.07)	18.02 (6.15)	21.75 (6.16)