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**An Exploration of the Use of Expressive Writing to Reduce Physical and Emotional
Symptoms Associated with Stress in a Sample of Orthodox Jewish Wives Preparing for a
Religious Observance**

by

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B.S. May 1994, Old Dominion University
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**A Dissertation Submitted to the Faculty of
Old Dominion University in Partial Fulfillment of the
Requirement for the Degree of**

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EDUCATION WITH A CONCENTRATION IN COUNSELING

**OLD DOMINION UNIVERSITY
May 2009**

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ABSTRACT

An Exploration of the Use of Expressive Writing to Reduce Physical and Emotional Symptoms Associated with Stress in a Sample of Orthodox Jewish Wives Preparing for a Religious Observance

David Jay Richels
Old Dominion University, 2009
Director: Dr. Nina W. Brown

The purpose of the study was to determine the effects of a short-term expressive writing intervention using a value-laden topic and neutral topic on the physical and psychological well-being of a group of Orthodox Jewish wives preparing for a religious observance. Participants ($N = 42$) were assigned to the experimental group ($n = 22$) and to the control group ($n = 20$) on a rotating basis, in the order of which they first logged into the survey website. The physical well-being of participants was measured by reduced scores on the PILL for physical symptoms associated with stress. Psychological well-being was measured by using the subscale scores on the MAACL-R for anxiety, hostility, and depression. Results from the data collection were analyzed using a Multivariate Analysis of Variance for within group differences on the measures and a Multivariate Analysis of Covariance for the between group differences on the measures with pretest scores used as the covariate.

Results indicated no within group differences pre- and post-test on the subscales of the MAACL-R with the exception of the PILL. A statistically significant main effect for the pretest scores and the post-test scores suggests that the participants may have had a reduction in physical symptoms regardless of the writing prompt they received. The multivariate tests indicated two main effects for covariates but no main effect for group

membership. Follow-up analysis comparing the post-test scores on the PILL indicated that there was a statistically significant difference between the scores reported by the experimental and control groups. This difference indicated that the control group reported fewer physical symptoms of stress following the writing intervention. Additionally, the main effect for the Pretest and post-test responses on the dependent measures indicated that a change in responses did occur following the writing intervention.

Discussion of the results and how they relate to the literature are included. Implications of the investigation and recommendations for future research are also included.

This dissertation is dedicated to my family. To my parents, Benn and Jacklyn Richels, for teaching me that with love and support you can move mountains, and for making me your favorite child. To my children, Leah, Riley, and Tyler, thank you for falling asleep by 8 o'clock, most nights, and allowing me to get some work done. Most of all, I would like to dedicate this dissertation to my wife, Dr. Corrin Richels, whose faith, encouragement, support, and guidance made the entire dissertation process bearable. Without you, I would not have made it through.

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CHAPTER I

INTRODUCTION

Background

Historically, Orthodox Jews have lived in communities that are relatively segregated from the rest of society (Greenberg, 1987). It is traditionally the role of women to maintain the home and family with a focus on doing so with religious observance at the forefront of every activity. It is said in the Talmud, in transliterated Hebrew, “Chachmos nashim bansah beysah”, or in English, “It is the wisdom of a woman that builds a home” (Mishlei, 14). The majority of tasks for the daily running of a household require consideration within the context of rituals and laws that are fundamental to Orthodox Judaism. For example, meal preparation and cooking are elevated from being solely necessary for nourishment to acts of religious observance by following the complex laws of *kashrus* (Forst, 1993). Preparations for religious observances involve additional considerations and rituals that include, exclude, and expand on the laws associated with typical daily observances (Cohen, 2007).

In Orthodox Jewish homes, it is characteristically the role of the woman to make all household preparations for the weekly Sabbath (*Shabbos*) and for any religious observances. Along with the usual laws and rituals regarding meal preparation, cooking on *Shabbos* and during holidays is not allowed. That is not to say that eating hot food is not allowed. Any food that is going to be served hot, warm, or cold must be fully cooked prior to the beginning of the observance (Cohen, 2007). The prohibitions for specific types of “work” are meant to increase the actual enjoyment of the observance itself. However, the preparations for observances are that much more complicated because the

food preparation and cooking with little exception must be completed prior to the observance itself. Unlike secular homes celebrating a holiday, there is no last minute dash to the grocery store to get one more necessary item. Anything that is not completed prior to the beginning of the observance simply is not part of the observance. As can be imagined, the amount of planning and pre religious observance Orthodox Jewish women do can be a daunting task. This study seeks to determine if Orthodox Jewish wives would benefit from expressing thoughts, feelings, and ideas that would make religious observances less anxiety producing.

Importance of the Study

There is a paucity of research investigating the thoughts and feelings of Orthodox Jews as they perform the tasks and rituals that are a necessary part of religious observance and daily life. According to the U.S. Census Bureau (1986), there were 4.932 billion people in the world. Of the world's population, it was estimated that there were 8.5 million Jews worldwide (Elazar, 1986). Elazar extrapolates that 45% of Jews identify themselves as being Orthodox in beliefs and practices resulting in an estimated 5.5 million Orthodox Jews worldwide. Taking into account the estimate of the global population and the estimated percentage of Orthodox Jews in the world, it works out to Orthodox Jews comprising approximately .11152% of the earth's population.

A recent search of the 2.5 million records archived (e.g., journals, books, dissertations, publications) in the PsycInfo database returned 57 results for the search term "Orthodox Judaism" and 132 for the search term "Orthodox Jews" (American Psychological Association, 2008). After the search was refined to include the search term, "counseling and Orthodox Jews", the number of result dropped to seven. What

these results show is although Orthodox Jews are statistically a small portion of the world's population, .11152% they are an even smaller portion of the 2.5 million records stored in PsycInfo, a major psychological research and publication index. The record results for Orthodox Jews is 21 times less than the ratio of Orthodox Jews to the world's population, and 49 times less when searching the term Orthodox Judaism. Finally, out of the 114,652 records that PsycInfo returned when searching the term "counseling" seven were returned when refining the results to include counseling along with Orthodox Judaism. All of this demonstrates the paucity of research available regarding the Orthodox Jewish population, and even less research done with the Orthodox Jewish population in the area of counseling. Therefore, the study provides information in an area of distinct need.

This study contributes to the literature in at least two different ways. One way is that it adds to the body of knowledge about Orthodox Jews. Case study research reports that the structure of Orthodox Judaism provided an outlet for de-stigmatizing mental illness and created a religious structure for three men suffering from paranoid schizophrenia to process and deal with the pain of their disorder (Heilman & Witztum, 2000). A second possible contribution is that the outcome of this study provides a description of the effects of religious rituals on individuals who are charged with major responsibilities for the observance of religious laws.

Purpose

The purpose of the study was to determine if the use of a short-term expressive writing intervention would result in a reduction of affective states and physical symptoms

associated with stress for participants who are Orthodox Jewish wives preparing for a religious observance.

Description of the Study

The congregational rabbi of B’Nai Israel Congregation in Norfolk, VA provided assistance in the areas of the recruitment of participants and wording of the writing prompts. The study looked at two groups, an experimental group, and a control group. Both groups participated in all aspects of the study via a web-based interface. The experimental group received writing prompts dealing with the participant’s spiritual beliefs and how those beliefs play a role in their preparation for the upcoming holidays and other religious observances. The control group received a benign writing prompt that was designed to minimize the possibility of producing anxiety among the participants. Both the experimental and control group wrote for 15 minutes a day for three days. All three groups were asked to complete surveys both prior to and following the short-term expressive writing intervention. Four survey instruments and a demographic questionnaire were used, (1) The Duke University Religion Index (DUREL), (2) The Multiple Affect Adjective Checklist-Revised (MAACL-R), and (3) Pennebaker Inventory of Limbic Languidness (PILL). The MAACL-R and the PILL were both filled out pre- and post short-term expressive writing intervention; the DUREL and the demographic questionnaire were only administered pre short-term expressive writing intervention. Each of these instruments took no more than 10 minutes to complete.

Rationale

Accelerating the Coping Process (Pennebaker, Colder, and Sharp, 1990) described a study that addressed the use of writing as a means of dealing with stress and stress

reduction. This study was Pennebaker and his colleagues' first use of a short expressive writing sample as an anxiety-reducing tool. In this study, 130 psychology students wrote for no more than 20 minutes about either their experience entering college, or a benign event in their life. The subjects wrote for three days during their first semester of college, near the beginning, middle, and end of the semester. Pennebaker and his colleagues found that the participants who wrote about their feelings of entering into college were able to maintain their GPA's from the first semester to the second, whereas the control group's GPAs dropped. However, neither group showed any improvement to their overall sense of well being or stress reduction.

In 1997, Pennebaker altered his experimental design by changing the writing prompt to include having his subjects write about their traumatic experiences over the course of three consecutive days. Again, the participants were instructed to write for exactly 20 minutes each writing session. The three consecutive day format limited the length of time that participant's were required to be part of the experiment. The truncated design became defined as a short-term expressive writing intervention. Results from the study indicated that students who wrote about their traumatic experiences experienced better physical and mental health following their participation. The 1997 study was the first to introduce a successful short-term expressive writing intervention as a means of dealing with anxiety and stress. Subsequently, Pennebaker's research has been conducted using subjects who are tasked to write about emotional events, (e.g., stressful, anxiety provoking, or traumatic) for 15 to 20 minutes over a 3 to 5 day period. Results of Pennebaker's and other researchers' studies have indicated that the use of short-term

expressive writing intervention can be successful in reducing anxiety. Yet, no studies were found that focus on this topic, or on this population.

Theoretical Foundation

The theoretical foundation for this study was derived mainly from the studies conducted using the many forms of the short-term expressive writing intervention.

Mogk, Otte, Reinhold-Hurley, and Kröner-Herwig (2006) were able to identify 216 studies, as of June 2006, which have been conducted using this intervention.

Pennebaker (1990) wrote about a friend of his who had gone through a horrifying experience during the night. She had contacted him for a recommendation for a therapist. He recommended that she go see someone whom they both knew. That therapist told her that she should tell everyone she meets that day about her horrifying experience.

Pennebaker's friend reported that the more she told the story the less anxiety and emotional upheaval she felt about the event. Upon hearing about the therapist's suggestion, he spoke to several psychologist friends of his. He found that they all felt that speaking about trauma was a sound intervention, but no one could tell him why it worked. Pennebaker's search for answers led him to begin to explore the thought of the healing power of catharsis and how it may be expressed through writing.

Pennebaker and Beall (1986) explored the concept of writing about events distress in one's life and the relation between writing and physical health. Pennebaker's studies have yielded multiple results demonstrating that people who write about their events are healthier than those who do not. Participants in these studies who did not write about the actual distressing event and wrote about mundane events in their life, or even those who wrote about the circumstances surrounding their distressing event show poor health one

month and five months removed from the initial study (Pennebaker & Beall, 1986; Pennebaker, 1990; Smyth, 1998).

Since Pennebaker's and Beall's 1986 study, Pennebaker has been involved in a great deal of research concerning the relationship between expressive writing and the health benefits of letting go of the trauma by processing it with writing (Pennebaker & Beall, 1986). Pennebaker and colleagues have also found that speaking into a voice recorder can accomplish similar results (Pennebaker, 1997).

It is possible that prayer or even deep religious observance could serve a similar function for individuals (VandeCreek, Janus, Pennebaker, & Binau, 2002). Adherence to Orthodox Jewish customs and laws may act in similar way for wives preparing for the observance of religious holidays. The prayers and blessings that are an integral part of the daily life of Jews may insulate wives from some of the potential anxieties that preparing for major events can assume (VandeCreek, Janus, Pennebaker, & Binau, 2002). It is also possible that the myriad laws, customs, and strictures that are a fundamental part of running an observant household may increase or create anxiety for wives as they seek to prepare for religious observances in accordance with the laws that are specific to each one.

Research Question

The research question that this study investigated was

1. What are the effects of a short-term expressive writing intervention using a value-laden topic and a neutral topic on the physical and psychological well-being of a group of Orthodox Jewish wives preparing for a religious observance?

Hypotheses

1. There will be no statistically significant differences within the experimental group between pre- and post-test scores on the Anxiety Scale of the MAACL-R.
2. There will be no statistically significant differences within the experimental group between pre- and post-test scores on the Hostility Scale of the MAACL-R.
3. There will be no statistically significant differences within the experimental group between pre- and post-test scores on the Depression Scale of the MAACL-R.
4. There will be no statistically significant differences within the control group between pre- and post-test scores on the Anxiety Scale of the MAACL-R.
5. There will be no statistically significant differences within the control group between pre- and post-test scores on the Hostility Scale of the MAACL-R.
6. There will be no statistically significant differences within the control group between pre- and post-test scores on the Depression Scale of the MAACL-R.
7. There will be no statistically significant differences within the experimental group between pre- and post-test scores of the physical symptoms associated with stress as measured by the PILL.
8. There will be no statistically significant differences within the control group between pre- and post-test scores of the physical symptoms associated with stress as measured by the PILL.
9. There will be no statistically significant differences between the experimental and control group scores for religiosity as measured on the DUREL.
10. There will be no statistically significant differences post-test between the experimental and control group scores on the Anxiety Scale of the MAACL-R.

11. There will be no statistically significant differences post-test between the experimental and control group scores on the Hostility Scale of the MAACL-R.
12. There will be no statistically significant differences post-test between the experimental and control group scores on the Depression Scale of the MAACL-R.
13. There will be no statistically significant differences post-test between the experimental and control group scores of the physical symptoms associated with stress as measured by the PILL.

Limitations

One of the main focal points of this study was the completion of a short-term expressive writing intervention for the purposes of processing and thereby reducing anxiety. The decision was made not to collect the writing samples to help the participants to feel more comfortable with their feeling of anonymity. The decision not to collect the writing samples themselves limits the researcher's ability to confirm that the writing samples were actually completed. Another limitation to this study is the fact that only those who have access to the World Wide Web were participants in this study, which limits the ability of those who do not have internet access from being represented.

Another possible limitation to the study is whether findings will generalize to individuals who are non-Jews but are living a lifestyle of strict religious observance. It is possible that either the anxiety or lack thereof leading up to preparation for religious observances is something that is uniquely part of the Orthodox Jewish experience. It was possible that even people who are Jews but do not follow the more stringent codes of Orthodoxy do not share the same levels of anxiety or lack thereof when approaching religious observances.

Assumptions of the Study

For the purposes of this study, it was hypothesized that the participants will all be observant Orthodox Jewish wives as specified in the participants' introduction literature. It was also hypothesized that, all of the participants were able to read and comprehend the research instruments. Furthermore, it was hypothesized that all of the participants in the study actually complete the writing interventions and surveys as described, honestly and without concern for social desirability. Lastly, it was hypothesized that, after a review of the literature that there would be a relation between the use of a short-term writing intervention and the reduction of anxiety among Orthodox Jewish wives.

Overview of the Study

The study investigated if the use of a short-term expressive writing intervention could be used for the reduction of affective states and physical symptoms associated with stress for participants who are Orthodox Jewish wives preparing for a religious observance. Short-term expressive writing interventions were divided for the participants between those that received a writing prompt with a value-laden topic and those that received a writing prompt with a neutral topic. Affective states were assessed by participants' completion of the MAACL-R before both the beginning of the writing intervention and following the completion of the writing intervention. Physical symptoms were assessed by participants' completion of the PILL before both the beginning of the writing intervention and following the completion of the writing intervention.

Chapter I of the study delineated the basic nature and design of the research. Chapter II presented a comprehensive review of the literature pertaining to expressive

writing interventions, research regarding holiday stress, as well as an overview of Orthodox Judaism, including the role of women, and religious observance practices. Chapter II also discussed the potential benefits reported regarding high levels of religiosity. Chapter III provided a description of all procedures and methods that were used in the collection and analysis of the data. Chapter IV is an analysis and presentation of the data along with a summary of the findings. Chapter V summarized the study, and offers conclusions, and recommendations for further research.

Definition of Terms

Anxiety: A painful or apprehensive uneasiness of mind usually over an impending or anticipated ill. An abnormal and overwhelming sense of apprehension and fear often marked by physiological signs (as sweating, tension, and increased pulse), by doubt concerning the reality and nature of the threat, and by self-doubt about one's capacity to cope with it (Merriam-Webster, 2008).

DUREL: *Duke University Religion Index*. Koenig, Parkison, and Meador (1997a) created the DUREL as a measure to assess multiple dimensions of religion in a brief but comprehensive format. Storch, Roberti, Heidergerken, et al. (2004) describe the DUREL as a five-item self-report scale that assesses the organizational, non-organizational, and intrinsic dimensions of religiousness.

MAACL-R: *The Multiple Affect Adjective Checklist*. (Zuckerman & Lubin, 1965)
The MAACL was revised (MAACL-R; Zuckerman & Lubin, 1985)

into a checklist of a 132 adjectives items where those surveyed are asked to check the adjectives that correspond to how they are feeling at that moment. As cited in Craig (2005), the MAACL-R requires reading abilities that are at least at the sixth-grade level (Lubin & Van Whitlock, 1995).

Orthodox
Judaism:

Judaism that adheres to the Torah and Talmud as interpreted in an authoritative rabbinic law code and applies their principles and regulations to modern living (Merriam-Webster, 2008).

Observant
Household:

A household where the members adhere laws and roles set forth in Orthodox Judaism.

PILL:

The Pennebaker Inventory of Limbic Languidness. The PILL is a 54 item instrument that is designed to measure the number of times the participant reports having experienced a group of common physical symptoms associated with stress and sensations. Participants are asked to rate the frequency of occurrence of the 54 items using a five-level Likert scale. Scores on the Likert-Scale range from a low “A” response of “have never or almost never experienced” to an “E” response of “more than once every week”.

Short Expressive
Writing
Intervention:

Writing intervention where participants respond to a writing prompt provided by the experimenter. Each writing exercise lasts 15 to 20 minutes per session. The writing intervention tasks can be assigned for any given period (i.e., span the course of weeks or months).

Short-term
Expressive
Writing
Intervention:

Three consecutive days of writing where the participants respond to a writing prompt provided by the experimenter. Each day's writing should last exactly 15 minutes a day. The writing intervention tasks span 3 consecutive days.

Stress:

A physical, chemical, or emotional factor that causes bodily or mental tension and may be a factor in disease causation (Merriam-Webster, 2008).

Web Based
Interface:

A platform for collecting data that is completely run on the World Wide Web. The data collection tool is designed for ease of use and a clear understanding of what type of inputs are desired. This mode of data collection allows for participants in the study to participate from anywhere in the world that has internet access.

CHAPTER II

LITERATURE REVIEW

Introduction to the Literature

The purpose of this study was to investigate the use of a short-term expressive writing intervention for the reduction of anxiety and the physical symptoms associated with stress to participants who are Orthodox Jewish wives preparing for a religious observance. Although there have been many studies conducted using expressive writing interventions that have correlated to physical well being (Pennebaker, 1997; Pennebaker & Beall, 1986; Esterling, Antoni, Fletcher, Margulies, & Schneiderman, 1994; Greenberg & Stone, 1992; Pennebaker, Colder, & Sharp, 1990), none have looked at using the expressive writing intervention in a short-term format with Orthodox Jewish wives. The review of the literature will discuss empirical research and conceptual literature regarding (1) expressive writing interventions as a means for reducing stress, (2) stress and anxiety associated with religious observance and preparation for holidays, (3) the possible link between anxiety and religious observance amongst Orthodox Jewish wives, and (4) the benefits of high levels of religiosity.

Expressive Writing Interventions

“Dear Diary” has traditionally been the way that people, particularly girls and women of literate age, have gone about engaging in expressive writing. A more scientific approach to self-disclosure and expressive writing can be seen in the works of Pennebaker, Smyth, Beal, Greenberg, and many more. In an effort to explore how far the effect of self-disclosure through expressive writing could be taken, researchers have explored the use of expressive writing as a means of therapeutic intervention (e.g.,

Batten, Follette, Hall, & Palm, 2002; Beckwith McGuire, Greenberg, & Gevirtz, 2005; Burton, & King, 2004; Creswell, Lam, Stanton, Taylor, Bower, & Sherman, 2007; Pennebaker, 1997a; Pennebaker, 1997b; Pennebaker & Chung, 2007). Results of these studies indicate that individuals who fully engage in the writing process and embrace the letting-go experience receive the greatest health benefit (Pennebaker, 1997a; Pennebaker, Colder, & Sharp, 1990).

From 1986 until 2006, 216 studies have been conducted using expressive writing interventions (Mogk, Otte, Reinhold-Hurley, and Kröner-Herwig, 2006). These and subsequent studies have been conducted to examine varying topics using a wide range of participants. As with many psychological studies, students at universities are often apt to be recruited as participants. Often student participants may receive credit from psychology classes as a means for enticement into the study, thus is true for expressive writing intervention studies (Burton & King, 2004; Cameron & Nicholls, 1998; Esterling, Antoni, Fletcher, Margulies, & Schneiderman, 1994; Greenberg & Stone, 1992; Lumley & Provenzano, 2003; Mosher & Danoff-Burg, 2006; Pennebaker & Beall, 1986; Pennebaker, Colder, & Sharp, 1990; Slatcher & Pennebaker, 2006; and Slone & Marx, 2004). Another population that has been studied are those with diagnosable medical conditions, e.g., high blood pressure (Beckwith McGuire, Greenberg, & Gevirtz, 2005), stage 1 or stage 2 breast cancer (Creswell, Lam, Stanton, Taylor, Bower, & Sherman, 2007), metastatic renal cell carcinoma (de Moor, Sterner, Hall, Warneke, Gilani, Amato, & Cohen, 2002), Epstein-Barr virus antibodies (Esterling, Antoni, Fletcher, Margulies, & Schneiderman, 1994), asthma (Smyth, Stone, Hurewitz, & Kaell, 1999), and Rheumatoid arthritis (Smyth, Stone, Hurewitz, & Kaell, 1999). In 2000, Richards, Beal, and

Pennebaker conducted an expressive writing intervention study using 98 subjects from a psychiatric prison. Though these populations are somewhat varied, a common theme runs through all of these studies, and that is the ability of expressive writing interventions to aid in the wellbeing of those who use the intervention.

General Wellbeing

Regardless of the research participants, expressive writing intervention studies tend to fall into 1 of 4 categories (1) general wellbeing, (2) trauma, (3) medical condition, and (4) scholastic achievement. Burton and King (2004) conducted research that explored the health benefits of expressive writing, specifically expressive writing about positive experiences, and its relation to general health benefits. Burton and King's sample was 90 undergraduate students who were randomly assigned to 1 of 2 conditions. The treatment group was asked to write about an intensely positive experience, for 20 minutes a day over three consecutive days. The control group was instructed to utilize each of the three writing prompts (1) write about their plans for the rest of the day, (2) describe their bedroom, and (3) describe what they were wearing, over three consecutive days, for 20 minutes a day. The results of the study showed enhanced positive moods and fewer health center visits due to illness for the experimental group as compared to the control group.

In 2006, Mosher and Danoff-Burg examined the potential health benefits of expressive letter writing. One hundred and eight college students were randomly assigned to 1 of 3 conditions. In the first condition, participants were instructed to, "write a letter to a friend, relative, or significant other who hurt or upset them." This group was known as the negative focused writing group. Another condition was the positive

focused writing group. This group was to write a letter to someone who helped or supported them. The remaining group was asked to write a letter to a school official about an impersonal relational topic. Each of the groups was instructed to write one letter for 25 minutes. Results indicated greater sleep duration and fewer days of illness for both treatment groups as compared to the control group. Furthermore, participants in the negative focused writing group reported better sleep quality compared to those in the control group.

Pennebaker, Colder, and Sharp (1990) sought to improve the health of students after writing about their thoughts and feelings associated with entering college. One hundred thirty students, who were entering their first year of college, were randomly assigned to 1 of 2 conditions. Participants were further randomly assigned to 1 of 4 waves of writing. The first wave wrote during the first week of the semester, the second wave wrote during the fifth week of the semester, the third wave wrote during the ninth week of the semester, and the fourth was wrote during the fourteenth week of the semester. Those in the first condition were instructed to write about their deepest thoughts and feeling about coming to college, whereas the second condition was instructed to write about a non-emotional superficial topic. Both conditions wrote for three consecutive days for twenty minutes a day. The results of the study indicated that visits to physicians were lower for the treatment group as compared to the control group. Furthermore, homesickness and anxiety were higher in the experimental group than the control group 2 to 3 months after the writing, but by the end of the school year the experimental group was either less anxious and homesick than the control group or similar. The study also yielded no difference between the waves of writing groups.

In 2000, Richards, Beal, and Pennebaker conducted a study of 98 psychiatric prison inmates. Richards et al. sought to explore the effects of expressive writing with a clinical population. The participants were randomly assigned to 1 of 3 conditions. The participants were to write for 20 minutes a day for 3 consecutive days. One condition was instructed to, “write about their deepest thoughts and feelings surrounding an upsetting experience.” The second condition was to write about a trivial topic, and the third group did no writing at all. The results of the study showed that the experimental group visited the infirmary less than the other two groups. General well being improved as a result of the expressive writing intervention leading researchers to investigate whether similar benefits could be found in altering the writing prompt to probe even deeper feelings.

Trauma

Studies that look to explore the relation between expressive writing and general wellbeing may also be included in 1 of the 4 categories identified in the expressive writing intervention literature. Both Greenberg and Stone (1992) and Slone and Marx (2004) examined the general wellbeing with the use of expressive writing interventions with those who have been through traumatic experiences. Greenberg and Stone’s study was designed to replicate previous studies that determined that disclosure of traumatic experiences improves physical and psychological health. The study also sought to compare expressive writing of previously disclosed trauma verses undisclosed trauma. The participants were 60 healthy undergraduate college students who were randomly assign to different conditions, (1) undisclosed trauma, (2) previously disclosed trauma, and (3) control group. Each group was instructed to write, using the prompt provided, for

4 consecutive days for 20 minutes a day. The undisclosed trauma group was to write about their thoughts and feelings about their trauma. The previously disclosed trauma group was to do the same, while the control group was instructed to write about a, “specific event or object in detail without discussing any of your own thoughts or feelings relating to the topic.” The study concluded that, “health benefits occur when severe traumas are disclosed, regardless of whether previous disclosure has occurred.”

Slone and Marx’s (2004) study also sought to explore the relation between expressive writing about traumatic experiences, and physical and psychological wellbeing. Unlike Greenberg and Stone (1992), the study was conducted without the delineation between previously disclosed and undisclosed trauma. Slone and Marx determined that, “In an effort to increase the sample’s homogeneity and because women report greater severity and frequency of psychological difficulties than men following traumatic events, only women were included in this study.” The participants were randomly assigned to 1 of 2 conditions. In one condition, participants were instructed to write about the most traumatic or distressing experience in their lives. In the other condition, participants were instructed to write about how they spent their time, without using emotion or opinions. Both groups were instructed to write for 20 minutes a day for 3 consecutive days. Participants in the experimental group reported fewer psychological or physical symptoms as compared to the control group.

Batten, Follette, Hall, & Palm (2002) conducted research with women who reported being victims of child sexual abuse, or were coerced into having sexual contact between 5- and 18-years of age. Batten et al.’s, study was conducted to determine whether writing about childhood sexual abuse would benefit the physical and

psychological wellbeing of the participants. Participants were randomly assigned to 1 of 2 treatments conditions. In the experimental group, participants were asked to write about their childhood sexual abuse, and the control group was directed to write about a “time-management framework” (Batten et al., 2002). The results of the study, divergent from the majority of the literature on expressive writing interventions, concluded that writing about childhood sexual trauma alone was not enough to provide psychological or physical benefit. Physical benefit has also been measured using both self-report measures and physiological correlates associated with medical conditions.

Medical Conditions

Not dissimilar from the categorical overlap of the Greenberg and Stone (1992) and the Slone and Marx (2004) studies between the wellbeing and trauma categories, Pennebaker and Beall’s (1986) study falls both into the trauma and medical condition categories. The study was conducted to, “learn if writing about traumatic events would influence long-term measures of health as well as short-term indicators of physiological arousal and reports of negative moods.” Participants were 46 college undergraduates who were randomly assigned to 1 of 4 conditions. Participants were to write about (1) their feeling associated with one or more traumas in their life, (2) facts surrounding a traumatic event, (3) feelings and facts surrounding a traumatic event, or (4) a trivial topic, depending on the group they have been assigned. Regardless of the condition, participants were to write for 15 minutes a day for 4 consecutive days. The results of the study revealed that all 3 of the experimental groups were associated with relatively higher blood pressure and negative moods following the essays. Fewer health center visits were

reported by the experimental groups, as compared to the control group, in the 6 months following the experiment.

Beckwith McGuire, Greenberg, and Gevirtz (2005) study, “evaluated systolic and diastolic blood pressure, heart rate variability and skin conductance at baseline, and 1 and 4 months in 38 participants with elevated blood pressure, randomly assigned to expressive writing or control groups.” Participants were instructed to write for 15 minutes a day for 3 consecutive days. The expressive writing group was instructed to write about a personally traumatic or stressful undisclosed topic, whereas the control group was instructed to write about how they spent the day before, how they spent that day, and what their plans were for the following week. The results concluded that, “overall, expressive writing demonstrated short-term autonomic benefits and longer-term moderated effects (on high blood pressure).”

Creswell, Lam, Stanton, Taylor, Bower, and Sherman’s (2007) study was designed to assess “self-affirmation, cognitive processing, and discovery of meaning as potential mediators of the effects of expressive writing on physical health in early stage breast cancer survivors.” The participants of the study were 60 women who were either stage 1 or stage 2 breast cancer patients who 20 weeks after completing cancer treatment. The participants were randomly assigned to 1 of 3 conditions. The first condition was instructed to write about their deepest thoughts and feelings regarding their experiences with breast cancer. Those in the second condition were instructed to write about positive thoughts and feelings regarding their experiences with breast cancer. Those in the third condition were instructed to write about facts regarding their cancer and its treatment. Like most of the expressive writing intervention studies participants were instructed to

write for 20 minutes an essay, but unlike other studies, the writing was not assigned to take place on consecutive days. The participants were instructed to write 4 essays over a 3-week period. The results of the study showed through, “content analysis of the essays that self-affirmation writing was associated with fewer physical symptoms at a 3-month follow-up assessment, with self-affirmation writing fully mediating the effects of the emotional expression and benefit finding writing conditions on reduced physical symptoms.” Furthermore, the study demonstrated, “the first evidence for self-affirmation as a viable mechanism underlying the health benefits of expressive writing.”

In a 2002 study, de Moor, Sterner, Hall, Warneke, Gilani, Amato, and Cohen explored the relation between the effects of expressive writing on psychological and behavior adjustment in enrolled in a vaccine trial for metastatic renal cell carcinoma. Forty-two patients were randomly assigned to an expressive writing or a neutral writing group. The expressive writing group was instructed to write about their cancer, while the neutral writing group was instructed to write about health behaviors. Participants in both groups were asked to write as they waited for their treatment, in a medical setting, over a four-week period. No duration for the writing sample was given. The results of the study demonstrated that patient in the, “Experimental group reported significantly less sleep disturbance, better sleep quality and sleep duration, and less daytime dysfunction compared to the control group.” Furthermore, the authors feel that the results suggest that expressive writing “may have sleep-related health benefits in terminally ill cancer patients.”

Esterling, Antoni, Fletcher, Margulies, and Schneiderman’s (1994) study was conducted to identify a relationship between emotional disclosure through expressive

writing or expressive speaking and Epstein-Barr virus antibody titers. Fifty-seven undergraduates who tested positive for Epstein-Barr virus antibody titers were randomly assigned to 1 of 3 conditions. In the first condition, participants were asked to write about a stressful event in their lives. During subsequent writing sessions, they were instructed to write about the same stressful event or to choose a new one. In the second condition, participants were asked to speak into a tape recorder about a stressful event in their lives. Similar to the first condition for subsequent recording sessions the participants were instructed to either speak about the same stressful event in their lives or a new one. The third condition was the trivial writing group. This group was asked to write about the content of their bedroom closet, their bedroom, and their car. Each of the conditions was instructed to write/speak for a 20-minute session, once a week, for three consecutive weeks. Researchers found that participants in the speaking experimental condition had statistically significantly lower Epstein-Barr virus antibody titers, which authors say suggest better cellular immune control over the latent virus, after the intervention than those in the written experimental group. The spoken experimental group also expressed more negative emotional words as compared to the baseline established by the control group. Participants in the written experimental group were reported to have had significantly lower values of the Epstein-Barr virus antibody titers than those in the written control group. It was also reported that participants in the written experimental group expressed more negative emotional words than the spoken experimental group and control group. Furthermore, the written experimental group used more positive emotional words than the spoken experimental group. Through the use of

a content analysis, the results of the study displayed that the spoken experimental group had the greatest improvement in cognitive change, self-esteem, and adaptive strategies.

In Smyth, Stone, Hurewitz, and Kaell (1999) study the researchers' were attempting to determine if expressive writing about stressful events would effect the disease status of asthma and rheumatoid arthritis patients. One hundred and twelve participants who were diagnosed with either asthma or rheumatoid arthritis were randomly assigned to either the experimental group, who wrote about the most stressful events in their lives, or the control group who wrote about a trivial topic without emotion or opinion. Both groups were asked to write for 20 minutes a day for 3 consecutive days. The results of the study demonstrated that both the asthma and rheumatoid arthritis participants in the experimental group showed statistically significant improvements as compared to the control group participants who demonstrated no change. Taken together the results clearly indicate a positive link between participating in expressive writing intervention and improved health. Similar positive outcomes were shown when scholastic achievement was used as the outcome variable.

Scholastic Achievement

Research using expressive writing intervention was used to examine if the intervention would directly or indirectly have an effect on scholastic achievement as measured by the grade point averages of college undergraduates (Cameron & Nicholls, 1998; Lumley & Provenzano, 2003). In 2003, Lumley & Provenzano conducted research to determine if writing about the stressful events in a participant's life would improve their grade point average. Seventy-four college students were randomly assigned to 1 of 2 conditions. In the experimental condition, the participants were instructed to write

about general life stresses for 4 consecutive days for 15 to 20 minutes daily. The control group was given the same instructions except that they were instructed to write about time management issues. The results of the study showed that participants in the experimental group had significantly higher grade point averages the next semester following the intervention. Furthermore, it was found that the mood from the first writing day until the last was a good predictor of increased grade point average, and that writing about general life stresses lead to improved academic achievement, as compared to the control group.

Cameron and Nicholls (1998) studied the effectiveness of writing as a means of fostering coping strategies, and to demonstrate the relation between the coping strategies and reduced medical clinic visits and psychological adjustment. The participants were 134 first year college students who were identified as either an optimist or pessimist by using a dispositional optimism measure. The participants were randomly assigned to 1 of 3 conditions. The first condition was an expressive writing group who were instructed to write about their thoughts and feelings about entering college. Furthermore, the participants in this condition were to come up with a coping plan for the stresses related to college. The participants in the second condition were instructed to write about their thoughts and feelings only, as they pertain to college life. Participants in the third condition were instructed to write about a trivial topic only without feelings or opinions. All three conditions were instructed to write for 20 minutes a session for 3 weekly writing sessions. Results of the study showed that optimists in both experimental groups demonstrated reduced illness-related visits to the physician. Conversely, only pessimists in the experimental group that included formulated coping strategies reported reduced

illness-related visits to the physician. As an unintended result, it was also determined that participants within the experimental conditions increased their grade point averages as compared to those within the control groups.

As early as the second half of the 20th century, counselors and therapist have been researching the efficacy of evidence based psychological practice (EBPP) in treatment, as well as the generalization of practices among populations (American Psychological Association Presidential Taskforce on Evidence-Based Practice, 2008). EBPP has been seen as a bridge between research and practice allowing for the findings of psychological research to aid conceptualization and treatment in counseling (Kazdin, 2008). Short-term expressive writing interventions studies have been conducted using varying populations. The review of the literature supports the effectiveness of the intervention. This study seeks to expand the body of research of both short-term expressive writing interventions and that of Orthodox Jews as a population.

Holiday Stress

In the United States, the culmination of the calendar year is punctuated by two major holidays, one Christian (i.e., Christmas), and one secular (i.e., New Year's). Elwell (1994) discusses the role the secular media provides during the holiday season with coverage designed to help holiday revelers reduce the anxiety that results from the frenzy surrounding the holiday celebrations. The medical literature documents the physical manifestation of the acute stress associated with the holidays with terms such as the "Christmas Coronary" and the "Happy New Year Heart Attack" (Kloner, 2004). The stress associated with the holidays may come from having to interact with relatives that are not seen at other times during the year as well as stressors related to entertaining, and

decorating (Kloner, 2004). It is likely that the stressors that are integral to Christian and secular holidays could be at work for women preparing for the observance of Jewish holidays (e.g., Rosh Hashanah, Yom Kippur, Sukkot, Purim, and Pesach (Passover) and the weekly religious observance of the Sabbath (*Shabbos*).

Orthodox Judaism, Women, and Religious and Holiday Observances

Although it is not the scope of this work to provide an elaborate or detailed description of the tenets and laws of Orthodox Judaism, it is necessary to discuss a few of fundamental aspects, laws, and rituals that are the basis of holiday observance. Being Jewish is fundamentally a birthright that is passed down through generations by mothers to their children. Judaism is currently divided into several broad categories that include, in order of religious observance, 1) the unaffiliated, 2) Reform Jews, 3) Conservative Jews, and 4) Orthodox Jews. Individuals that are born to a Jewish mother but do not maintain any ties or membership to a synagogue are known as “unaffiliated”. On the opposite end of the continuum, are the individuals who are affiliated with Orthodox synagogues and make the utmost effort to follow the most rigorous adherence to the laws set forth in the Torah and the Talmud. Among the laws of the Torah and Talmud are those that are specific to the role of women as guardians of tradition.

Orthodox Women and Judaism

Modern women including those who are Orthodox Jews are employed in activities and vocations both within the home and in the wider world. However, for the Orthodox Jewish woman there is a mandated obligation to take a husband, bear children, and create a home that maintains the structures and strictures of adherence to Torah law. By so doing, the Orthodox Jewish woman is able to transform the tasks that are necessary

for the daily survival of a family into an opportunity for spiritual connection the Almighty (Greenberg, 1984). For example, an Orthodox Jewish woman preparing a meal has to be aware of and plan for the ways to respect the numerous laws of *kashrus* that regard preparing and cooking food. Even the preparation of certain types and amounts of dough are accompanied by blessings requesting absolution of sins and protection of husband and children. Laws of food preparation and childcare become infinitely more complex at the end of the workweek with the welcoming of *Shabbos* or the holy Sabbath. Shabbos observance requires the cessation of mundane activities including those of cooking, and cleaning. Therefore, food and clothing must be prepared ahead of time and preserved or maintained at temperature for four meals worth of consumption (i.e., Friday night dinner, Saturday breakfast, lunch, and dinner). Although all of these tasks seem to be only mundane or necessary for survival in design, in the practice of Orthodox Jewish Observance they connect not only the woman but also the household to service of the Almighty. Similar to everyday/weekly observances and activities there are very specific laws and rituals that are part of religious observance.

Holiday and Religious Observance

Orthodox Jewish women face similar preparation agendas as anyone else preparing for a holiday or festival. Some families travel to visit relatives, some families receive the visiting relatives, and some simply host friends and neighbors from the surrounding community. Regardless of the number of people being prepared for there are specific items to purchase, decorations to be put up, and food to be made. For Orthodox Jewish women preparing for a religious holiday, or religious observance, the need to follow strict laws regarding preparation and cooking of the food raises the level

preparation out of the mundane and back into the spiritual. However, the strict observance of the laws of *kashrus* also may add another possible element of stress and anxiety. Added to the potential challenges associated with menu planning, the laws that forbid many different activities on Shabbos also apply to holiday celebrations with very few exceptions. The time constraints of planning and preparing for immediate family, extended family, friends, or some combination thereof are stressful without adding in very specific laws, rituals, and strictures to the process. However, research also indicates that the very act of processing all aspects of life through the religious perspective may alleviate the very anxiety that it could potentially generate (VandeCreek, Janus, Pennebaker, & Binau, 2002).

Heilman and Weitzman (2000) discuss the use of religion to process and cope with mental illness for three case studies of “Ultra-Orthodox” men suffering from paranoid schizophrenia. In the reported case studies, one patient experienced such heightened stress in preparation for Shabbos that he was unable to cope resulting in feelings of anxiety and failure related to not achieving the level of expected observance. However, the therapist working with him was able to use his client’s religiosity to help him process his feelings and feel more connected to his religion and therefore less anxious about meeting the expected requirements of Shabbos preparation. Certainly, this study does not seek to suggest that preparing for a religious observance would result in the level of anxiety experienced by an individual with paranoid schizophrenia. However, it is possible that women preparing for a religious observance experience stress associated with the preparations and would therefore benefit from finding a means to process that stress and solidify their connection and commitment to their purposes.

Benefits of Religiosity

It is possible that the level of religiosity and spirituality of the participants contributes in a unique way to the response to intervention. Researchers have investigated the role of religiosity in substance abuse among athletes (Storch, Storch, Kovacs, Okun, & Welsh, 2003), academic dishonesty (Storch & Storch, 2001), the relationship of religiosity and defensiveness (Steffen & Fearing, 2007), death anxiety (Roff, Butkeviciene, & Klemmack, 2002), stress in women with fibromyalgia (Dedert, Studts, Weissbecker, Salmon, Banis, & Sephton, 2004), as well as among patients facing life threatening conditions (Ironson, Balban, O'Cleirigh, Kumar, Larson, & Woods, 2001).

Each of these studies shows results that support the influential role of religiosity on the actions, outlook, and the health of human beings. In a study of 105 university varsity athletes, results indicated that the greater the levels of religiosity among the athletes the less likely the student athletes were to partake in the abuse of alcohol or marijuana (Storch, Storch, Kovacs, Okun, & Welsh, 2003). Similar results were found when participants were 244 college students asked to complete the DUREL as well as a 9 question survey regarding academic dishonesty. Results indicated that students who rated themselves as participants in organized religion and rated themselves with a high degree of intrinsic religiosity had lower reported rates of academic dishonesty (Storch & Storch, 2001). Because the effect of greater religiosity has been shown to have on a variety of situations, a group of researchers was led to examine if the effect was mitigated by inherent degrees of defensiveness (Steffen & Fearing, 2007).

Defensiveness was defined using the denial of distress and repressive defensiveness subscales from the Weinberger Adjustment Inventory, and psychosocial adjustment (Depression subscale from the WAI, the Perceived Stress Scale, and the Sarason Social Support Scale; Steffen & Fearing, 2007). Results indicated that religiosity was associated with higher levels of psychosocial adjustment. Results were interpreted to have eliminated defensiveness as a mediating factor in the effects of religiosity on people's outlooks on life and the health benefits that may also result.

An even more interesting effect of greater degrees of religiosity is its impact on life outlook and the possible health benefits that people with higher levels of religiosity seem to benefit from. In a sample of 130 Lithuanian students and health care and social service professionals, higher levels of intrinsic religiosity were associated with less fear of the unknown (Roff, Butkeviciene, & Klemmack, 2002). This finding may contribute to the health benefits seen in patients with a variety of life altering and life threatening conditions.

In a study of 91 women with a reported history of fibromyalgia, a chronic condition characterized by widespread pain in muscles ligaments and tendons, higher levels of religiosity were correlated with fewer physiological signs of stress (Dedert, Studts, Weissbecker, Salmon, Banis, & Sephton, 2004). Results were interpreted to indicate that higher reported levels of religiosity provide women with fibromyalgia a protective effect that extends to physiologically based measures of stress. Even more profound effects of religiosity are seen in patients with life threatening illnesses such as HIV/AIDS (Ironson, Balban, O'Cleirigh, Kumar, Larson, & Woods, 2001).

A group of 279 patients diagnosed with HIV/AIDS were subdivided into a group of individuals designated as long-term survivors ($n = 79$) and a comparison group of patients that were diagnosed as HIV positive ($n = 200$; Ironson, Balban, O'Cleirigh, Kumar, Larson, & Woods, 2001). Groups were compared on levels of religiosity using Ironson-Woods SR Index (Sense of Peace, Faith in God, Religious Behavior, and Compassionate View of Others). Results indicated that higher scores on the SR Index correlated with less distress, more hope, social support, health behaviors, helping others, and lower cortisol levels. Taken together it is apparent that high degrees of religiosity have positive impact on the actions, outlook, and the health of human beings. Therefore, the use of short-term expressive writing intervention was hypothesized to be a potential outlet for strengthening the benefits of religious observance and providing a means of processing holiday and other religious observance experiences.

CHAPTER III

METHODOLOGY

Purpose

The purpose of this study is to investigate the use of a short-term expressive writing intervention for the reduction of anxiety and the physical symptoms associated with stress with participants who are Orthodox Jewish wives preparing for a religious observance. Results of the short-term expressive writing intervention were investigated using a variety of measures and instruments. Specifically, the four survey instruments are (1) *The Duke University Religion Index* (DUREL), which measures organizational, non-organizational, and intrinsic dimensions of religiousness (See Appendix A), (2) *The Multiple Affect Adjective Checklist-Revised* (MAACL-R), which were used to measure anxiety, hostility, and depression, and (3) the *Pennebaker Inventory of Limbic Languidness* (PILL), which measures the physical symptoms associated with stress (See Appendix B).

Research Question

The research design for the study was comprised of a repeated-measure experimental design. The design is repeated measures because each participant completed the MAACL-R and the PILL before the first writing experience and after the third writing experience. The study employed an experimental design by attempting to manipulate the dependent variable of scores obtained on the MAACL-R and the PILL following a systematic short-term expressive writing intervention. Quantitative methods were used for data analysis.

The research question that formed the framework for the study was

1. What are the effects of a short-term expressive writing intervention using a value-laden topic and neutral topic on the physical and psychological well-being of a group of Orthodox Jewish wives preparing for a religious observance?

The physical well-being of participants for the purposes of this study was measured by reduced scores on the PILL for physical symptoms associated with stress. Furthermore, psychological well-being was measured by using the standardized subscale scores on the MAACL-R for anxiety, hostility, and depression.

Hypotheses

1. There will be no statistically significant differences within the experimental group between pre- and post-test scores on the Anxiety Scale of the MAACL-R.
2. There will be no statistically significant differences within the experimental group between pre- and post-test scores on the Hostility Scale of the MAACL-R.
3. There will be no statistically significant differences within the experimental group between pre- and post-test scores on the Depression Scale of the MAACL-R.
4. There will be no statistically significant differences within the control group between pre- and post-test scores on the Anxiety Scale of the MAACL-R.
5. There will be no statistically significant differences within the control group between pre- and post-test scores on the Hostility Scale of the MAACL-R.
6. There will be no statistically significant differences within the control group between pre- and post-test scores on the Depression Scale of the MAACL-R.

7. There will be no statistically significant differences within the experimental group between pre- and post-test scores of the physical symptoms associated with stress as measured by the PILL.
8. There will be no statistically significant differences within the control group between pre- and post-test scores of the physical symptoms associated with stress as measured by the PILL.
9. There will be no statistically significant differences between the experimental and control group scores for religiosity as measured on the DUREL.
10. There will be no statistically significant differences post-test between the experimental and control group scores on the Anxiety Scale of the MAACL-R.
11. There will be no statistically significant differences post-test between the experimental and control group scores on the Hostility Scale of the MAACL-R.
12. There will be no statistically significant differences post-test between the experimental and control group scores on the Depression Scale of the MAACL-R.
13. There will be no statistically significant differences post-test between the experimental and control group scores of the physical symptoms associated with stress as measured by the PILL.

Participants

Participants were 42 wives who attend services at an Orthodox Jewish synagogue. This study's protocol was approved by the Institutional Review Board of Old Dominion University, Norfolk, VA. Participation in this project was voluntary and confidential. All participants in this study were provided information about the research including parameters of participation. All participants gave their informed consent (See Appendix

C). Participants were recruited using the email addresses of wives attending services at the B’Nai Israel Orthodox Synagogue in Norfolk, Virginia, as well as email addresses of wives who are congregants at multiple orthodox synagogues in the Baltimore, Maryland area. Additional participants were obtained through word-of-mouth communication among wives at the various synagogues.

Participants ($N = 42$) were assigned to the experimental group ($n = 22$) and to the control group ($n = 20$) on a rotating basis, in the order of which they first logged into the survey website. Participants were not assigned a specific time to log in on the first day of data collection. The daily limits for participation were 12:00 midnight until 11:59 PM later that day. Consequently, a participant had an equal chance of being assigned to the experimental group as the control group for this study. Both groups filled-out and submitted a demographic questionnaire, which did not contain any information that will allow for the identification of the subjects (See Appendix D). Additionally, both groups filled-out and submitted the DUREL, the MAACL-R, and the PILL, along with three short-term expressive writing samples.

Procedure

The Need for Confidentiality and Anonymity and How This is Addressed

Because the community of wives that could participate in this study is small, ensuring confidentiality was a critical component for the women’s willingness to participate. Therefore, ensuring that information and essays could not be readily attributed to any particular individual was a vital part of getting the wives to commit to being part of the project. Both the experimental and control groups filled-out all information via a web-based interface, which was designed to allow participants to create

their own username and password. These self-created identifiers allowed participants to log in and complete the appropriate questionnaires and surveys on three separate occasions, while keeping the information associated with the same participant. The short-term expressive writing samples could have been written in an electronic format via the participant's text editing software, via a web note pad that was included on the data collection website, or via paper and pencil. The researcher did not collect the writing samples themselves, rather the samples stayed in the possession of the participants.

The control group members followed the same procedures as the intervention group participants, with the writing prompt being the only area of difference.

On day 1, all participants were provided the following instructions, after they complete the pre intervention data collection.

Over the next three days, please write about your thoughts and feelings about the topic provided below. Do not worry about grammar, spelling, or sentence structure. Remember, no one will see your writings but you, so it is important that you feel free to explore your feelings and thoughts about your topic. You may choose to write about the same topic for all three days, or to write about the something different each time.

Please find a comfortable place to write, relatively free from distractions such as phones and interruptions, and be alone with your thoughts, if possible. Once you begin writing, continue to write for the entire 15 minutes. When 15 minutes have elapsed, your writing should cease.

The experimental group was provided the following as their writing prompt, “What do you find gratifying about preparing for a religious observance and do you feel it adds to your enlightenment?” On day 1, the control group was provided with the writing prompt, “What things do you do with your family for entertainment?” On day 2, the control group was provided with the writing prompt, “In what ways does your family work together?” On day 3, the control group was provided with the writing prompt, “Describe the location where you are currently writing.”

On days two and three, the instructions for both groups were altered to read, “Please find a comfortable place to write and be alone with your thoughts, if at all possible. Once you begin writing, continue to write for the entire 15 minutes. When 15 minutes have elapsed your writing should cease.”

Instrumentation

The instruments used were the Duke University Religion Index, Multiple Affect Adjective Checklist - Revised, and the Pennebaker Inventory of Limbic Languidness. Each survey instrument will be discussed in greater detail.

Duke University Religion Index (DUREL; Koenig, Parkison, and Meador 1997a)

The authors created the DUREL as a measure to assess multiple dimensions of religion in a brief but comprehensive format. Storch, Roberti, Heidergerken, et al. (2004) described the DUREL as a five-item self-report scale that assesses the organizational, non-organizational, and intrinsic dimensions of religiousness. Storch, Roberti, Heidergerken, et al. also provided definitions of each of the items as follows:

Organizational religiosity is measured by one-item and defined as the frequency with which one attends formal religious services. Non-organizational religiosity

is measured by one-item and defined in terms of the amount of time spent in private religious activities such as prayer or meditation. Intrinsic religiosity is measured by three-items and conceptualized as the degree to which one integrates their religiousness into their life. Assessment of the organizational and non-organizational dimensions is based upon the response to the respective individual item (Koenig, Parkerson, & Meador, 1997b). Koenig et al. (1997b) suggest that the intrinsic religiosity items be added to derive a composite subscale score.

Adhering to the scoring guidelines yields possible composite scores between 1 and 25 with higher scores indicating higher levels of overall religiosity. Storch, Strawser, and Storch's 2004 investigated the two-week test-retest reliability of the Duke Religion Index. The study consisted of 20 undergraduates, 11 of whom were women. The participant's mean age were 24.7 yr. ($SD = 5.0$ yr.). The findings of this study supported the two-week test-retest reliability, with an intraclass correlation coefficient of .91. Storch, Roberti, Heidgerken, Storch, Lewin, Killiany, Baumeister, Bravata, and Geffken (2004) found that a "significant, positive correlation was found between the Duke Religion Index and a measure of religious beliefs, supporting the convergent validity of the DRI. These findings provide further support for the reliability and construct validity of the DRI."

The Multiple Affect Adjective Checklist (MAACL; Zuckerman & Lubin, 1965)

The MAACL was revised into a checklist of a 132 adjectives where those surveyed are asked to check the adjectives that correspond to how they are feeling at that moment (MAACL-R; Zuckerman & Lubin, 1985). As explained by Craig (2005), the MAACL-R requires reading abilities that are at least at the sixth-grade level (Lubin &

Van Whitlock, 1995). However, it has been adapted to accommodate readers at the fourth-grade level (Van Whitlock, 1998; Van Whitlock & Lubin, 1998). A short form of the MAACL-R has been developed that is comprised of a survey that consists of a 66 adjective checklist. The short form of the MAACL-R has a nearly identical internal consistency to the long form, with a correlation between the two forms ranging between .84 and .94 (Lubin et al., 2001). Therefore, in this study, the short form of the MAACL-R was used.

According to Craig (2005), the MAACL-R is designed to measure both positive and negative affects. Positive affect is described by words such as loving, friendly, and affectionate. Negative affect is described by words such as anxiety, depression, and hostility. A Sensation-Seeking scale is another component of the MAACL-R, which addresses more energetic aspects of positive mood such as feeling adventurous or enthusiastic. Additionally, the test has a bipolar scale of Dysphoria. The Dysphoria component includes the sub-scales of Anxiety, Depression, Hostility, and Positive Affect, which also includes the Sensation Seeking subscale (Craig, 2005).

As summarized in Craig (2005), the reliability of the MAACL-R has acceptable levels of temporal reliability and validity (Lubin, Swearngin, & Zuckerman, 1997; Lubin & Zuckerman, 1999). The Alpha coefficients for the MAACL-R range between .70 to .90 for the Positive Affect and the Dysphoria scales. Alpha coefficients range from .49 to .81 in state mood (how one currently feels). Coefficients range from .07 to .63 in trait ratings (how one generally feels) and for the Sensation Seeking scale (Zuckerman & Lubin, 1985).

The Pennebaker Inventory of Limbic Languidness (PILL)

The PILL is a 54-item instrument that is designed to measure the number of times the participant reports having experienced a group of common physical symptoms and sensations. Participants are asked to rate the frequency of occurrence of the 54 items using a five-level Likert scale. Scores on the Likert-Scale range from a low “A” response of “have never or almost never experienced” to an “E” response of “more than once every week.” The inventory may be scored by totaling the number of C, D, or E responses, which indicates that the individual is experiencing a symptom at least once a month and up to more than once a week. For the PILL, the Cronbach alphas range from .88 to .91 and the 2-month test-retest reliability range from .79 to .83.

Data Analysis

The nature of the data collection and the scores that result lend themselves to quantitative analysis using both descriptive and inferential statistical methods. The data collected from the demographic questionnaire is used to describe the participants. Survey data were collected as the dependent variables for the experimental and control groups.

Data collection schedule

Data were collected prior to participation in the short-term expressive writing intervention for all measures. Following the completion of all three expressive writing tasks, the participants again completed the MAACL-R and the PILL. Table 1 provides a detailed description of the data collection schedule.

Table 1. Data collection schedule

Pre-intervention	Post Intervention
Demographic Questionnaire	MAACL-R
DUREL	PILL
MAACL-R	
PILL	

Demographic data

Each participant was asked 10 questions designed help describe the participants of this study : (1) What is your age; (2) Check all that apply to you (married, have been divorced, have been widowed); (3) What types of school(s) did you attend from kindergarten until receiving you high school diploma or equivalent [home school, private school (religious), private school (secular), public school, other]; (4) Highest degree earned (high school diploma or equivalent, bachelor's degree, master's degree, doctorate, other); (5) Ethnic group designation; (6) What is the primary language spoken in your household; (7) In what country do you currently reside; (8) How many people are you preparing for the observance for; (9) Were you raised in an observant household; and (10) How many females are in your household above the age of 12 for the observance. Additionally, the DUREL was completed by each participant prior to short-term expressive writing intervention. As described previously, the DUREL served as a measure of religiosity.

Survey Data

Each of the surveys yields a composite score that is interval in nature. The MAACL-R and the PILL were completed by each participant at the beginning of the study prior to participation in the short-term expressive writing intervention and at the conclusion of the study following the completion of the short-term expressive writing interventions.

Statistical analysis

Descriptive statistics for the demographic data are reported as frequencies with accompanying percentages of respondents for each possible response. Descriptive statistics for the DUREL, MAACL-R subscales, and PILL consist of means, and standard deviations. Demographic data were analyzed to determine if statistically significant differences existed between the experimental and control groups using contingency tables resulting in a Pearson Chi Square statistic. Table 2 shows the comparisons made for the within and between group analyses. Pre short-term expressive writing intervention scores MAACL-R, and PILL were compared to post short-term expressive writing intervention scores on these measures within the experimental and control groups using a multivariate analysis of variance (MANOVA). Between group differences on the DUREL were analyzed using an independent samples t-test. Post short-term expressive writing intervention scores MAACL-R, and PILL were compared between the experimental and control groups using a multivariate analysis of covariance (MANCOVA) with group membership as the independent variable and scores on the surveys as the dependent variables. Pretest scores on the MAACL-R and PILL were used as the covariate to

control for any pre intervention differences between the groups. Univariate ANOVA was used for follow-up where appropriate.

Table 2. Within and Between group comparisons.

Group or Measure	Comparison	
	Within Group Comparisons	
Experimental Group	Pretest Anxiety MAACL-R	Post-test Anxiety MAACL-R
	Pretest Depression MAACL-R	Post-test Depression MAACL-R
	Pretest Hostility MAACL-R	Post-test Hostility MAACL-R
	Pretest PILL	Post-test PILL
Control Group	Pretest Anxiety MAACL-R	Post-test Anxiety MAACL-R
	Pretest Depression MAACL-R	Post-test Depression MAACL-R
	Pretest Hostility MAACL-R	Post-test Hostility MAACL-R
	Pretest PILL	Post-test PILL
	Between Group Comparisons	
DUREL	Experimental Group	Control Group
Post-test Anxiety	Experimental Group	Control Group
MAACL-R		
Post-test Depression	Experimental Group	Control Group
MAACL-R		
Post-test Hostility	Experimental Group	Control Group
MAACL-R		
Post-test PILL	Experimental Group	Control Group

CHAPTER IV

RESULTS

The purpose of this study was to investigate the use of Pennebaker's short-term expressive writing intervention (1996) for the reduction of anxiety and the physical symptoms associated with stress with participants who are Orthodox Jewish wives preparing for a religious observance. Results of the short-term expressive writing intervention were investigated using a variety of a questionnaire and survey instruments. Specifically, the three survey instruments were (1) *The Duke University Religion Index* (DUREL), which measures organizational, non-organizational, and intrinsic dimensions of religiousness, (2) *The Multiple Affect Adjective Checklist-Revised* (MAACL-R), used to measure anxiety, hostility, and depression, and (3) the *Pennebaker Inventory of Limbic Languidness* (PILL), which measures the physical symptoms associated with stress. The research question that forms the framework for the study was:

1. What are the effects of a short-term expressive writing intervention using a value-laden topic and a neutral topic on the physical and psychological well-being of a sample of Orthodox Jewish wives preparing for a religious observance?

The physical well-being of participants was measured by reduced scores on the PILL for physical symptoms associated with stress. Furthermore, psychological well-being was measured by using the standardized subscale scores on the MAACL-R for anxiety, hostility, and depression. The study employed an experimental design by attempting to manipulate the dependent variable of scores obtained on the MAACL-R and the PILL following a systematic short-term expressive writing intervention. The

design is repeated measures because each participant will complete the MAACL-R and the PILL before the first writing experience and after the third writing experience. The research used quantitative methods for data analysis.

Participants were 42 wives who attend services at an Orthodox Jewish synagogue. This study's protocol was approved by the Institutional Review Board of Old Dominion University, Norfolk, VA. Participation in this project was voluntary and confidential. All participants in this study were provided information about the research including parameters of participation. All participants gave their informed consent. Participants were recruited using the email addresses of wives attending services at the B'Nai Israel Orthodox Synagogue in Norfolk, Virginia, as well as email addresses of wives who are congregants at multiple orthodox synagogues in the Baltimore, Maryland area. Additional participants were obtained through word-of-mouth communication among wives at the various synagogues.

Participants ($N = 42$) were assigned to the experimental group ($n = 22$) and to the control group ($n = 20$) on a rotating basis, in the order of which they first logged into the survey website. Consequently, a participant had an equal chance of being assigned to the experimental group as the control group for this study. Participants were not assigned a specific time to log in on the first day of data collection. The daily limits for participation were 12:00 midnight until 11:59 PM later that day. Both groups filled-out and submitted a demographic questionnaire, which did not contain any information that will allow for the identification of the subjects. Additionally, both groups filled-out and submitted the DUREL, the MAACL-R, and the PILL. Participants also completed three short-term expressive writing samples.

Procedure

The Need for Confidentiality and Anonymity and How this was Addressed

Because the community of wives that could participate in this study is small, ensuring confidentiality was a critical component for the women's willingness to participate. Therefore, ensuring that information and essays could not be readily attributed to any particular individual was a vital part of getting the wives to commit to being part of the project. Both the experimental and control groups filled-out all information via a web-based interface, which was designed to allow participants to create their own username and password. These self-created identifiers allowed participants to log in and complete the appropriate questionnaires and surveys on three separate occasions, while keeping the information associated with the same participant. The short-term expressive writing samples could have been written in an electronic format via the participant's text editing software, via a web note pad that was included on the data collection website, or via paper and pencil. The writing samples themselves were not collected by the researcher, rather the samples stayed in the possession of the participants. Writing samples were not collected in order to encourage the participants to become fully engage in the writing process without concern for content being read by someone else.

On day 1, all participants were provided the following instructions, after they complete the pre intervention data collection.

Over the next three days, please write about your thoughts and feelings about the topic provided below. Do not worry about grammar, spelling, or sentence structure. Remember, no one will see your writings but you, so it is important

that you feel free to explore your feelings and thoughts about your topic. You may choose to write about the same topic for all three days, or to write about the something different each time.

Please find a comfortable place to write, relatively free from distractions such as phones and interruptions, and be alone with your thoughts, if possible. Once you begin writing, continue to write for the entire 15 minutes. When 15 minutes have elapsed, your writing should cease.

The experimental group was provided the following as their writing prompt, “What do you find gratifying about preparing for a religious observance and do you feel it adds to your enlightenment?” On day 1, the control group was provided with the writing prompt, “What things do you do with your family for entertainment?” On day 2, the control group was provided with the writing prompt, “In what ways does your family work together?” On day 3, the control group was provided with the writing prompt, “Describe the location where you are currently writing.”

On days two and three, the instructions for both groups were altered to read, “Please find a comfortable place to write and be alone with your thoughts, if at all possible. Once you begin writing, continue to write for the entire 15 minutes. When 15 minutes have elapsed your writing should cease.”

The remainder of this chapter is organized to report the findings of the study. The first section presents findings from the demographic questionnaire. The second section presents *within group* findings on the MAACL-R Anxiety, Depression, and Hostility subscales and PILL. The third section presents *between group* findings on the DUREL,

MAACL-R Anxiety, Depression, and Hostility subscales and PILL. The final section contains a summary of the findings.

Findings Related To Demographic Questionnaire

Prior to completing the first writing prompt, each participant was asked 10 questions designed to help describe the participants of this study: (1) What is your age; (2) Check all that apply to you (married, have been divorced, have been widowed); (3) What types of school(s) did you attend from kindergarten until receiving your high school diploma or equivalent [home school, private school (religious), private school (secular), public school, other]; (4) Highest degree earned (high school diploma or equivalent, bachelor's degree, master's degree, doctorate, other); (5) Ethnic group designation; (6) What is the primary language spoken in your household; (7) In what country do you currently reside; (8) How many people are you preparing for the observance for; (9) Were you raised in an observant household; (10) How many females are in your household above the age of 12 for the observance.

Experimental Group Profile

As seen in Table 3, the highest single percentage of respondents in the experimental group were aged 56 years or older ($n = 10$, 45.5%). For the variable of marital status, the majority of respondents for the experimental described themselves as married ($n = 16$, 72.7%). For the variable of what type of school(s) did respondents attend from kindergarten until receiving a high school diploma or equivalent, the highest single percentage of respondents for the experimental group described themselves as having attended public school ($n = 11$, 50%). The highest single percentage of respondents in the experimental group described themselves as having obtained a high

school degree or equivalent ($n = 10$, 45.5%). For the variable of ethnic group, the majority of respondents described themselves as white ($n = 17$, 77.3%), English speakers ($n = 19$, 86.4%), currently residing in the United States ($n = 18$, 81.8%). The highest single percentage of respondents in the experimental described themselves as preparing for 10 or more people ($n = 7$, 31.8%). The experimental group was evenly divided between respondents describing themselves as having been raised in a religiously observant home and those describing themselves as having not been raised in a religiously observant home. The highest single percentage of respondents in the experimental group described themselves as having 2 more females in the home greater than 12-years-old to help prepare for the observances ($n = 7$, 31.8%).

Control Group Profile

The highest single percentage of respondents in the control group were between 26 and 40-years-old ($n = 7$, 35%). For the variable of marital status, the majority of respondents for the control group described themselves as married ($n = 13$, 65%). For the variable of what type of school(s) did respondents attend from kindergarten until receiving a high school diploma or equivalent, the highest single percentage of respondents for the control group described themselves as having attended public school ($n = 10$, 50%). The highest single percentage of respondents in the control group described themselves as having obtained a bachelor's degree ($n = 8$, 40%). For the variable of ethnic group, the majority of respondents described themselves as white ($n = 14$, 70%), English speakers ($n = 19$, 95%), currently residing in the United States ($n = 18$, 90%). The highest single percentage of respondents in the control group described themselves as preparing for 10 or more people ($n = 5$, 25%). Each group was evenly

divided between respondents describing themselves as having been raised in a religiously observant home and those describing themselves as having not been raised in a religiously observant home. The highest single percentage of respondents in the control group described themselves as having 2 more females in the home greater than 12-years-old to help prepare for the observances ($n = 8$, 40.0%).

Group Differences

The experimental and control groups had only two questions where the highest frequencies reported by respondents were different 1) reported age, and 2) highest degree earned. The highest single percentage of respondents for the experimental group for the question regarding age was in the 56 years or greater category whereas the highest single percentage of respondents for the control group was in the 26-40 years old category. The only other question where the highest single percentage of respondents for the two groups was different was for the reported highest degree earned. The experimental group reported the highest single percentage of respondents in the high school degree category and the control group reported the highest single percentage of respondents in the bachelor's degree category. A contingency table analysis was completed for all of the questions to ensure that the differences were not statistically significant. Table 3 shows the frequencies and accompanying percentages for each group. The contingency table analysis follows Table 3 with a summary of results shown in Table 4.

Table 3. Demographic Data

Variable	Experimental Group		Control Group	
	Frequency	Percentage	Frequency	Percentage
Age (in years)				
25 and under	2	9.1	2	10.0
26 to 40	7	31.8	7	35
41 to 55	3	13.6	5	25
56 and older	10	45.5	6	30
Marital Status				
Married	16	72.7	13	65
Widowed	4	18.2	2	10
Divorced and Remarried	1	4.5	4	20
Widowed and Remarried	1	4.5	1	5
Type of School				
Home School	5	22.7	3	15
Private School (Religious)	4	18.2	3	15
Private School (Secular)	1	4.5	2	10
Public School	11	50	10	50
Private (Religious) & Public School	1	4.5	1	5
Private (Secular) & Public School	0	0	1	5

Table 3 (cont.) Demographic data

Variable	Experimental Group		Control Group	
	Frequency	Percentage	Frequency	Percentage
Highest Degree				
High School Degree or Equivalent	10	45.5	4	20
Two –Years Undergraduate	1	4.5	0	0
Bachelor’s Degree	5	22.7	8	40
Master’s Degree	5	22.7	6	30
Doctorate	1	4.5	2	10
Ethnic Group				
White	17	77.3	14	70.0
Black	1	4.5	1	5.0
Jewish	4	18.2	3	15.0
Caucasian	0	0	2	10
Language Spoken				
English	19	86.4	19	95.0
French	3	13.6	1	5.0
Country				
United States	18	81.8	18	90.0
Canada	4	13.6	2	10.0

Table 3 (cont.) Demographic data

Variable	Experimental Group		Control Group	
	Frequency	Percentage	Frequency	Percentage
Number of People Preparing For				
1 person	0	0	0	0
2 people	0	0	1	5.0
3 people	1	4.5	0	0
4 people	1	4.5	3	15.0
5 people	3	13.6	4	20.0
6 people	5	22.7	4	20.0
7 people	1	4.5	1	5.0
8 people	3	13.6	1	5.0
9 people	1	4.5	1	5.0
10 or more people	7	31.8	5	25.0
Raised Observant				
Yes	11	50.0	10	50.0
No	11	50.0	10	50.0
How Much Help				
1 person	6	27.3	7	35.0
2 people	7	31.8	8	40.0
3 people	3	13.6	2	10.0
4 people	5	22.7	2	10.0
5 people	1	4.5	1	5.0

Contingency table analysis was conducted to evaluate whether there were any greater than expected frequencies between the experimental and control groups in the answers to the demographic questions. A statistically significant result would suggest that group membership (i.e., experimental vs. control) resulted in unexpected frequencies for a given response. Therefore, for the purpose of this statistical analysis, a non-statistically significant result indicates that the frequency of responses to an item was not related to being a member of the experimental or control groups. Chi square results for the contingency tables produced for each of the 10 questions are summarized in Table 4. Results indicated no statistically significant relationships between group membership and item answers.

Table 4. Pearson Chi-Square Results for Demographic Question Items by Group Membership

Question	Pearson Chi-Square	Degrees of Freedom	<i>p</i> (2-sided)	Cramer's V
Age	.348	3	.951	.091
Marital Status	3.22	4	.521	.277
Type of School Attended	1.93	5	.858	.215
Highest Degree Earned	4.60	4	.330	.331
Ethnic Group	2.43	3	.504	.236
Language Spoken	.907	1	.341	.147
Country Residing In	.573	1	.449	.117

Table 4 (cont.) Pearson Chi-Square Results for Demographic Question Items by Group Membership

Question	Pearson Chi-Square	Degrees of Freedom	<i>p</i> (2-sided)	Cramer's V
Number of People Preparing For	4.50	8	.809	.327
Raised Observant	0	1	1.00	0
Number of Females to Help	1.54	4	.820	.191

Instrumentation

The instruments used were the Duke University Religion Index, Multiple Affect Adjective Checklist - Revised, and the Pennebaker Inventory of Limbic Languidness. Each survey instrument will be discussed in greater detail.

Duke University Religion Index (DUREL)

The authors created the DUREL as a measure to assess multiple dimensions of religion in a brief but comprehensive format (Koenig, Parkison, and Meador (1997a). Storch, Roberti, Heidergerken, et al. (2004) described the DUREL as a five-item self-report scale that assesses the organizational, non-organizational, and intrinsic dimensions of religiousness. Adhering to the scoring guidelines yields possible composite scores between 1 and 25 with higher scores indicating higher levels of overall religiosity. The described composite score for each participant was used in the subsequent analysis.

The Multiple Affect Adjective Checklist (MAACL)

The MAACL (Zuckerman & Lubin, 1965) was revised into a checklist of a 132 adjectives items where those surveyed are asked to check the adjectives that correspond

to how they are feeling at that moment (MAACL-R; Zuckerman & Lubin, 1985). As explained by Craig (2005), the MAACL-R requires reading abilities that are at least at the sixth-grade level (Lubin & Van Whitlock, 1995). However, it has been adapted to accommodate readers at the fourth-grade level (Van Whitlock, 1998; Van Whitlock & Lubin, 1998). A short form of the MAACL-R has been developed that is comprised of a survey that consists of a 66 adjective checklist. The short form of the MAACL-R has a nearly identical internal consistency to the long form, with a correlation between the two forms ranging between .84 and .94 (Lubin et al., 2001). Therefore, in this study, the short form of the MAACL-R was used.

According to Craig (2005), the MAACL-R is designed to measure both positive and negative affects. Positive affect is described by words such as loving, friendly, and affectionate. Negative affect is described by words such as anxiety, depression, and hostility. A Sensation-Seeking scale is another component of the MAACL-R, which addresses more energetic aspects of positive mood such as feeling adventurous or enthusiastic. Additionally, the test has a bipolar scale of Dysphoria. The Dysphoria component includes the sub-scales of Anxiety, Depression, Hostility, and Positive Affect, which also includes the Sensation Seeking subscale (Craig, 2005). For this study, the sub-scales of the Dysphoria component of Anxiety, Depression, and Hostility were analyzed. The scoring for each subscale allows raw scores to be converted to a standard score for comparison across subscales. For the purposes of this study, scores were converted to standard scores in order to create an equal interval variable.

The Pennebaker Inventory of Limbic Languidness (PILL)

The PILL is a 54-item instrument that is designed to measure the number of times the participant reports having experienced a group of common physical symptoms and sensations. Participants are asked to rate the frequency of occurrence of the 54 items using a five-level Likert scale. Scores on the Likert-Scale range from a low “A” response of “have never or almost never experienced” to an “E” response of “more than once every week.” The inventory may be scored by totaling the number of C, D, or E responses, which indicates every month or so or higher. The total score obtained by following the scoring conventions discussed was used in the subsequent analyses.

Findings Related to Within Group Differences

Figure 1 presents the pretest and post-test means and standard deviations for the two groups on each of the measures. A multivariate analysis of variance (MANOVA) was calculated to explore potential differences within the experimental and control groups related to responses given pre-writing intervention and post-writing intervention for each of the dependent measures. Pretest and post-test short-term expressive writing intervention scores on the MAACL-R subscales of Anxiety, Hostility, and Depression, as well as the PILL were compared for the experimental and control groups.

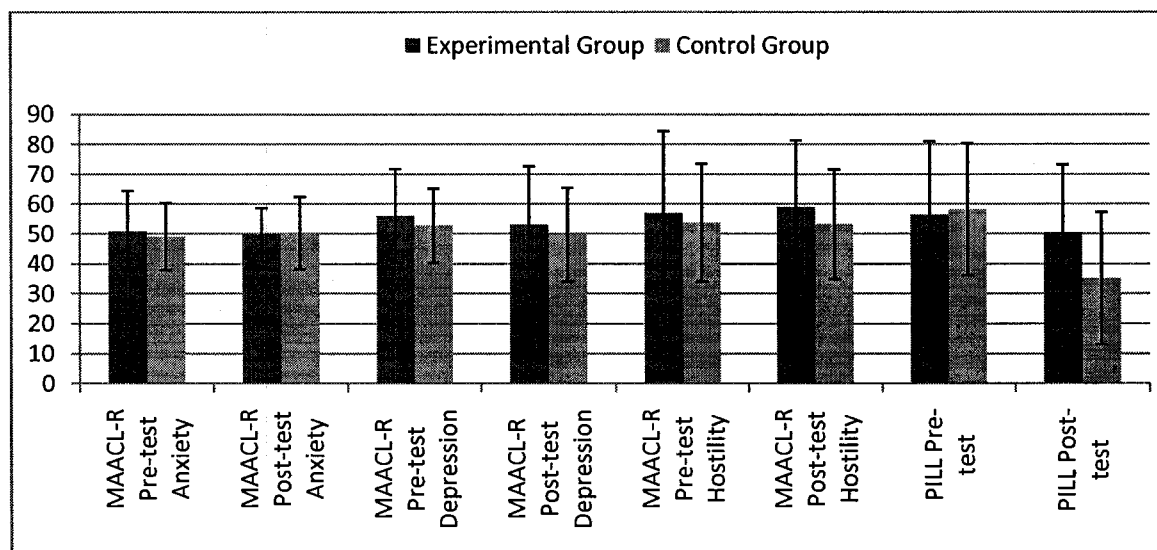


Figure 1. Means and Standard Deviations for the Experimental and Control Groups for Pretest and Post-test for Each Survey.

Levene's Test of equality of error variances was used to determine if the groups had similar variances for each instrument. Results of Levene's test indicated no statistically significant differences in error variances for the PILL ($F_{(3,80)} = .271, p < .846$), MAACL-R Anxiety subscale ($F_{(3,80)} = 1.087, p < .359$), MAACL-R Depression subscale ($F_{(3,80)} = .973, p < .410$), and MAACL-R Hostility subscale ($F_{(3,80)} = .712, p < .547$). A non-statistically significant difference for this test indicates that the variance of each of the dependent measures does not violate the assumption of equal variances necessary to use the MANOVA statistic.

Table 5 reports the results of the multivariate tests. Wilks' Lambda was chosen to determine if there were any main effects for group, test time, and interaction of group and test time. There were no statistically significant multivariate effects for Group ($F_{(4,33)} = 1.711, p < .171$) which indicates that there were no statistically significant differences between the experimental and control groups for any of the measures. Statistically

significant Wilks' Lambda values were found for the Pre- vs. Post-test responses on the measures ($F_{(4,77)} = 2.579, p < .044$) indicating a main effect for when the measures were filled out. This result indicates that when group membership was *not* accounted for, a statistically significant difference between the pretest and post-test measures resulted. There was no statistically significant interaction between the pretest and post-test measures when compared by group (i.e., experimental vs. control; $F_{(4,77)} = 1.224, p < .308$).

Table 5. Multivariate Tests of Pre- vs. Post-test Responses (All Participants) and Group (Experimental vs. Control Group).

			Hypothesis	Error	Partial		
Effect		Value	<i>F</i>	df	df	<i>p</i>	e ²
Group	Wilks' Lambda	.970	.601 ^a	4	77	.663	.030
Pre vs. Post	Wilks' Lambda	.882	2.579 ^a	4	77	.044*	.118
Pre vs. Post	Wilks' Lambda	.940	1.224 ^a	4	77	.308	.060
by Group							

^a F values represent exact statistic

* $p < .05$

A statistically significant multivariate main effect was found for the Pre- vs. Post-test factor. Follow-up ANOVAs were calculated to determine the source of these main effects and is summarized in Table 6. A Bonferroni correction was calculated for the four resulting comparisons reducing a statistically significant p value to $p < .013$. Results

indicate statistically significant differences between the Pretest and Post-test scores on PILL ($F_{(1,83)} = 8.394, p < .013$) when group membership was not taken into account.

Table 6. Follow-up ANOVAs to determine source of main effect for Pre- vs. Post-test Measures (Total Participants).

Source	Dependent Variable	<i>F</i>	<i>P</i>	Partial η^2
Pre vs. Post	PILL	8.394	.005*	.095
	MAACL-R Anxiety Scale	.003	.954	.000
	MAACL- R Depression Scale	.696	.407	.009
	MAACL- R Hostility	.024	.878	.000

* $p < .013$

Figure 2 shows the marginal means for the PILL divided by group (experimental vs. control) and time (pre- vs. post). Pairwise comparisons of the marginal means for the pre- vs. post-test responses (collapsed for groups) on the PILL indicated a statistically significant difference of 14.527, $p < .005$. Follow-up ANOVA to determine the source of the difference indicated no statistically significant difference on pre- vs. post-test responses for the experimental group ($F_{(1,44)} = 0.695, p < .409$). However, a statistically significant difference on pre- vs. post-test responses for the control group ($F_{(1,44)} = 10.914, p < .002$) was observed. Although there is no statistically significant difference between the experimental and control group for this measure, the statistically significant difference indicated by the follow-up ANOVA and pairwise comparison indicate a reported reduction in physical symptoms for the control group post writing intervention.

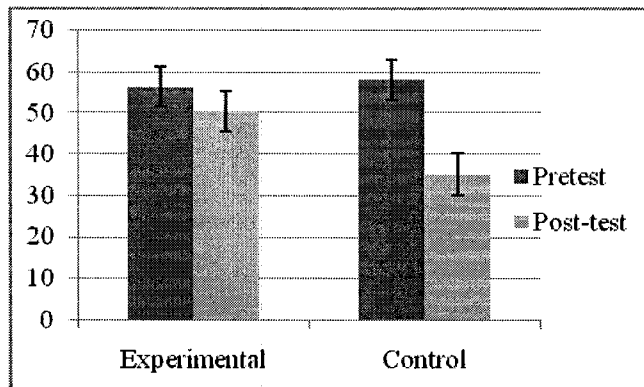


Figure 2. Marginal Means for the PILL. Error Bars Represent Standard Error of the Mean.

Findings Related To Between Group Differences

The DUREL was completed by each participant prior to receiving a writing prompt. As described previously, the DUREL served as a measure of religiosity with higher obtained scores indicating higher degrees of religiosity. Between group differences on the DUREL were analyzed using an independent samples t-test. The mean score for the experimental group was 21 ($SD = 5.3$) and the mean for the control group was a 22 ($SD = 4.8$). The highest possible composite score for this measure is a 25. Thus, the resulting means indicate that the respondents in both groups reported high levels of religiosity. Results of the independent samples t-test assuming unequal variances indicated no statistically significant differences ($t_{(40)} = .942, p < .352$) between the experimental and control groups for religiosity.

Results of a bivariate correlation between scores on the DUREL and pre- and post-test scores on the MAACL-R subscales of anxiety, depression, and hostility as well as the PILL are provided in Table 7. A bivariate correlation was computed to determine if participants' reported levels of religiosity was related to their reported levels of depression, anxiety, hostility, and/or physical symptoms of stress prior to the writing

intervention and following the writing intervention. Results indicated no statistically significant relation between scores on the DUREL and pretest scores on the MAACL-R subscales of Anxiety ($r = -.06, p < .347$) and Hostility ($r = -.233, p < .069$). Likewise no statistically significant relation between scores on the DUREL and pretest scores on the PILL was indicated ($r = -.188, p < .117$). However, results indicated a statistically significant relation between scores on the DUREL and pretest scores on the MAACL-R Depression subscale ($r = -.322, p < .019$). This result indicates that as reported levels of religiosity decreased reported levels of depression increased.

Results indicated no statistically significant relation between scores on the DUREL and post-test scores on the MAACL-R subscales of Anxiety ($r = -.131, p < .408$), Depression ($r = .042, p < .794$), and Hostility ($r = .012, p < .940$). Likewise no statistically significant relation between scores on the DUREL and post-test scores on the PILL was indicated ($r = -.155, p < .327$).

Table 7. Pearson Product Moment Correlations for the DUREL

Measures	Pre-writing	Post-writing
MAACL-R Anxiety	-.06	-.131
MAACL-R Depression	-.322*	.042
MAACL-R Hostility	-.233	.012
PILL	-.188	-.155

* $p < .05$

Post short-term expressive writing intervention scores on the MAACL-R subscales of Anxiety, Hostility, and Depression, as well as the PILL were compared between the experimental and control groups using a multivariate analysis of covariance

(MANCOVA) with group membership as the independent variable and scores on the instruments as the dependent variables. Follow-up analyses consisted of univariate ANOVA where appropriate. Pretest scores on the MAACL-R subscales and PILL were used as the covariate to control for any pre intervention differences between the groups.

Box's M was calculated to ensure that the covariances of the measures were not statistically significantly different. Results of Box's M were not statistically significant ($M = 19.95, p < .06$). Therefore, there is insufficient evidence that the covariance matrices differ indicating that results from follow-up ANOVAs may be interpreted.

Levene's Test of equality of error variances was used to determine if the groups had similar variances for each instrument. Results of Levene's test indicated no statistically significant differences in error variances for the Post-Test PILL ($F_{(1,40)} = .335, p < .566$), Post-Test MAACL-R Anxiety subscale ($F_{(1,40)} = 2.77, p < .57$), Post-Test MAACL-R Depression subscale ($F_{(1,40)} = .116, p < .74$), and Post-Test MAACL-R Hostility subscale ($F_{(1,40)} = .895, p < .35$). A non-statistically significant difference for this test indicates that the variance of each of the dependent measures does not violate the assumption of equal variances necessary to use the MANCOVA statistic.

Results of the multivariate tests are summarized in Table 8. Wilks' Lambda was chosen to determine if there were any main effects for group or for the covariates (i.e., the pretest scores on each of the survey instruments). For the independent factor of group membership (i.e., experimental vs. control), there was no statistically significant multivariate effect ($F_{(4,33)} = 1.711, p < .171$). This finding indicates that there were no statistically significant main effects for differences between the experimental group and the control group on the measures. However, pairwise comparisons of the marginal

means for the experimental group's post-test responses vs. the control group's post-test responses on the PILL indicated a statistically significant difference of 13.570, $p < .042$. Follow-up ANOVA to determine the source of the difference indicated a statistically significant difference ($F_{(1,36)} = 4.44, p < .042$).

Statistically significant Wilks' Lambda values were found for the Pretest MAACL-R Depression subscale ($F_{(4,33)} = 12.64, p < .001$), and the Pretest MAACL-R Hostility subscale ($F_{(4,33)} = 4.65, p < .004$) indicating a main effect for these two covariates. The main effect for the covariates does not make a distinction between the experimental and control groups.

Table 8. Multivariate Tests of Pretest Covariates and Group (Experimental vs. Control).

		Hypothesis		Error	Partial	
Effect	Value	F	df	df	p	η^2
Group	Wilks' Lambda .828	1.711 ^a	4	33	.171	.172
Pretest MAACL-R Anxiety	Wilks' Lambda .913	.789 ^a	4	33	.541	.087
Pretest MAACL-R Depression	Wilks' Lambda .395	12.639 ^a	4	33	.000*	.605
Pretest MAACL-R Hostility	Wilks' Lambda .639	4.653 ^a	4	33	.004*	.361

^a F Values represent the exact statistic

* $p < .01$

Table 9 reports the results of the follow-up ANOVAs. Follow-up ANOVAs were calculated to determine the source of the main effect for the Pretest MAACL-R

Depression subscale and the Pretest MAACL-R Hostility subscale. A Bonferroni correction was calculated for the 8 resulting comparisons reducing a statistically significant p value to $p < .006$. Comparisons are based on all participants without designations made for group membership.

Table 9. Follow-Up ANOVAs to Determine Source of Main Effects.

Source	Dependent Variable	F	p	Partial η^2
Pretest MAACL-R Depression	Post-test PILL	7.769	.008	.177
	Post-test MAACL-R Anxiety	6.526	.015	.153
	Post-test MAACL-R Depression	53.612	.000*	.598
	Post-test MAACL-R Hostility	1.511	.227	.040
Pretest MAACL-R Hostility	Post-test PILL	3.010	.091	.077
	Post-test MAACL-R Anxiety	.508	.481	.014
	Post-test MAACL-R Depression	17.201	.000*	.323
	Post-test MAACL-R Hostility	1.201	.280	.032

* $p < .006$

Results indicate statistically significant differences between the Pretest and Post-test scores on the MAACL-R Depression subscale ($F_{(1,36)} = 53.612, p < .006$; See Figure 3). The statistically significant difference between the reported pre- and post-intervention scores suggests that the participants reported reduced levels of depression regardless of whether they were assigned to the experimental or control group.

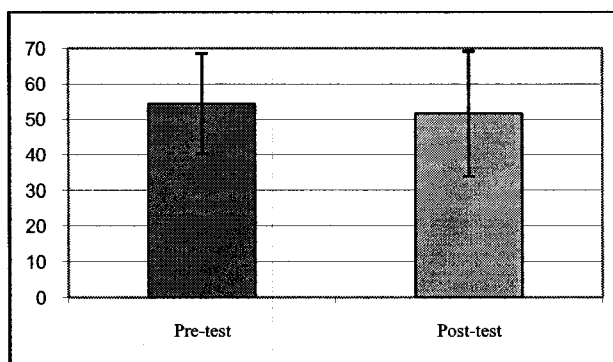


Figure 3. Pretest vs. Post-test Means and Standard Deviations for the MAACL-R

Depression Subscale

Results for the Pretest MAACL-R Hostility subscale indicate statistically significant differences between the subscale and the Post-test subscale score for MAACL-R Depression ($F_{(1,36)} = 17.201, p < .006$). Although the main effect for the difference between the Depression subscale and the Hostility subscale is statistically significant, there are no statistically significant interpretations. That is to say, that it is unlikely that the pretest score on the Depression subscale related in any meaningful way to the post-test score on the Hostility subscale.

Summary of Findings

Findings were divided into those related to the demographic questionnaire, those related to between group differences, and those related to within group differences. Results of a contingency table analysis indicated that there were no statistically significant differences between the experimental and control groups on the descriptor information. The non-statistically significant finding for the demographic questions allows for analysis without the need for controlling for additional covariates.

The within group comparisons also did not find a statistically significant main effect for group membership. However, a statistically significant finding for the pre- vs. post writing intervention responses to the PILL resulted. Figure 2 shows that the control group had statistically significantly lower scores on the PILL post writing intervention. This finding suggests that the act of engaging in the intervention may have reduced physical symptoms for the control group.

A MANCOVA was calculated in order to determine if there were any differences between the experimental and the control group on the measures. Follow-up univariate ANOVAs were calculated where appropriate. The between groups analysis was designed to answer the research question that was the primary purpose of this study. Results of Box's M and Levene's test indicated that there were no statistically significant violations of the assumptions necessary to interpret the statistical results of the MANCOVA. The multivariate tests indicated two main effects for covariates but no main effect for group membership. However, follow-up of pairwise comparisons indicated a statistically significant difference in the reported post-test scores on the PILL between the experimental and control groups. Additionally, the main effect for the Pretest and post-test responses on the dependent measures indicated that a change in responses did occur following the writing intervention most notably on the MAACL-R Depression subscale. Implications of the findings are discussed in Chapter V.

CHAPTER V

SUMMARY, CONCLUSIONS, AND FUTURE RESEARCH

Chapter I laid the foundation for the study by stating the purpose and the significance of this research. Chapter II provided a review of the literature pertaining to (1) stress and anxiety associated with religious observance and preparation, (2) the possible link between anxiety and religious observance amongst Orthodox Jewish wives, (3) the benefits of high levels of religiosity, and (4) expressive writing interventions as a means for reducing stress. Chapter III detailed the research procedures and measures utilized in the study. Chapter IV outlined the results of the data analysis conducted to answer the research question and test the hypotheses. This chapter consists of an overview of the study, a summary of the findings, conclusions based on the findings, the relationship of the findings to the existing literature, and a discussion of possible avenues for future research.

Overview of the Study

Therapists and clients are constantly seeking to find therapies and therapeutic techniques to aid in the therapeutic process. There are many ways that clients can engage themselves in the introspection needed to bring about the necessary awareness to bring about behavioral change. One possible resource is the use of expressive writing as a means of processing thoughts and emotions. Many empirical studies have been conducted using expressive writing as a means of therapeutic intervention (e.g., Batten, Follette, Hall, & Palm, 2002; Beckwith McGuire, Greenberg, & Gevirtz, 2005; Burton, & King, 2004; Creswell, Lam, Stanton, Taylor, Bower, & Sherman, 2007; Pennebaker, 1997a; Pennebaker, 1997b; Pennebaker & Chung, 2007). Participants for the research

have varied from individuals who are non-distressed (e.g., Slatcher & Pennebaker, 2006; and Slone & Marx, 2004), to participants who are incarcerated in a psychiatric prison (Richards, Beall, & Pennebaker, 2000). Regardless of the participant pool, results suggest that expressive writing interventions can aid in the wellbeing of those who use the intervention.

Studies have also indicated that a high degree of religiosity contributes to feelings of wellbeing and promotes positive outlook (Dedert, Studts, Weissbecker, Salmon, Banis, & Sephton, 2004; Ironson, Balban, O'Cleirigh, Kumar, Larson, & Woods, 2001; Roff, Butkeviciene, & Klemmack, 2002). However, there is scant research on the effects of expressive writing on the well-being of highly religious people. Among religious groups that participate in a high level of religious observance, are people who practice the tenets of Orthodox Judaism.

There is a paucity of research available regarding the Orthodox Jewish population, and even less research done with the Orthodox Jewish population in the area of counseling. It is possible that the level of religiosity and spirituality of the participants contributes in a unique way to the response to intervention. Research by VandeCreek, Janus, Pennebaker, and Binau (2002) reported that for some people prayer is a form of disclosure and provides similar benefits. Additionally, case study research reports that the structure of Orthodox Judaism provided an outlet for de-stigmatizing mental illness and created a religious structure for three men suffering from paranoid schizophrenia to process and deal with the pain of their disorder (Heilman & Witztum, 2000). Therefore, the use of short-term expressive writing intervention was hypothesized to be a potential outlet for strengthening the benefits of religious observance and providing a means of

processing the psychological and physical stress associated with the preparation for a religious observance.

There are two reasons why this study contributes to the existing literature. The first is that it adds to the body of knowledge about Orthodox Jews. The second reason is that the outcome can provide a description of the effects of psychological and physical symptoms associated with stress on Orthodox Jewish wives who are charged with the major responsibilities for the observance of religious laws when preparing for religious observances.

Purpose and Research Design

This study was conducted to determine if the use of a short-term expressive writing intervention would result in a reduction of affective states and physical symptoms associated with stress for participants who are Orthodox Jewish wives preparing for a religious observance. Additionally, this study was conducted to provide information on the potential benefits of short-term expressive writing intervention for participants with a high degree of religiosity.

The research question that formed the framework for the study was

1. What are the effects of a short-term expressive writing intervention using a value-laden topic and neutral topic on the physical and psychological well-being of a group of Orthodox Jewish wives preparing for a religious observance?

The research design for the study was comprised of a repeated-measure experimental design. The design is repeated measures because each participant completed the MAACL-R and the PILL before the first writing experience and after the

third writing experience. The study employed an experimental design by attempting to manipulate the dependent variable of scores obtained on the MAACL-R and the PILL following a systematic short-term expressive writing intervention. Quantitative methods were used for data analysis.

Samples and Procedures

Participants were recruited using the e-mail addresses of wives attending services at the B’Nai Israel Orthodox Synagogue in Norfolk, Virginia, as well as email addresses of wives who are congregants at multiple orthodox synagogues in the Baltimore, Maryland area. Additional participants were obtained through word-of-mouth communication among wives at the various synagogues. Participants ($N = 42$) were assigned to the experimental group ($n = 22$) and to the control group ($n = 20$) on a rotating basis, in the order of which they first logged into the survey website. Statistical analysis indicated that the experimental and control groups did not have unexpected differences in the frequencies of data reported on the demographic questionnaire. That is, both groups were composed of individuals reporting similar ages, marital status, types of schools attended, highest level of education obtained, ethnic group, language spoken in the home, country of residence, the number of people being prepared for, having been raised observant (or non-observant), and the number of girls or women available to help with preparations. Additionally, participants completed the DUREL in order to account for levels of religiosity. The two groups were not statistically different on the variable of religiosity.

The participants were asked to write daily for 15 minutes in response to a provided writing prompt. Prior to receiving the first writing prompt, participants were

asked to respond to a 10 item demographic questionnaire, complete the DUREL, the MAACL-R, and the PILL. The writing sample itself was not collected. Following the third day of expressive writing, participants were asked to complete the MAACL-R and the PILL.

Data Analysis

Descriptive statistics for the demographic data are reported as frequencies with accompanying percentages of respondents for each possible response. Descriptive statistics for the DUREL, MAACL-R subscales, and PILL consist of means, and standard deviations. Demographic data were analyzed to determine if statistically significant differences existed between the experimental and control groups using contingency tables resulting in a Pearson Chi Square statistic. Between group differences on the DUREL were analyzed using an independent samples t-test. Pre short-term expressive writing intervention scores MAACL-R, and PILL were compared to post short-term expressive writing intervention scores on these measures within the experimental and control groups using a multivariate analysis of variance (MANOVA). Post short-term expressive writing intervention scores MAACL-R, and PILL were compared between the experimental and control groups using a multivariate analysis of covariance (MANCOVA) with group membership as the independent variable and scores on the surveys as the dependent variables. Pretest scores on the MAACL-R and PILL were used as the covariate to control for any pre intervention differences between the groups. Results of these analyses were presented in both tabular and narrative form in Chapter IV.

Findings and Conclusions

Presented are the hypotheses, findings, and conclusions for the measured feelings (MAACL-R) and the physical symptoms (PILL) measures.

Hypothesis One

“There will be no statistically significant differences within the experimental group between pre- and post-test scores on the Anxiety Scale of the MAACL-R.”

Findings. Results of a MANOVA indicated no main effect for pre- vs. post-test differences ($F_{(1,83)} = .003, p < .954$) for this measure. Visual analysis of Figure 1 shows that scores remained virtually the same between the pretest ($M = 50.77, SD = 13.64$) and post-test ($M = 49.86, SD = 8.85$) measures. Therefore, the null hypothesis could not be rejected.

Conclusion. Participating in a three-day short-term expressive writing exercise that required participants to respond to a value laden topic did not result in a statistically significant reported reduction in anxiety as evidenced by pre- and post-test differences in scores on the Anxiety Scale of the MAACL-R.

Hypothesis Two

“There will be no statistically significant differences within the experimental group between pre- and post-test scores on the Hostility Scale of the MAACL-R.”

Findings. Results of a MANOVA indicated no main effect for pre- vs. post-test differences ($F_{(1,83)} = .024, p < .878$) for this measure. Visual analysis of Figure 1 shows that scores increased slightly between the pretest ($M = 57.09, SD = 27.33$) and post-test ($M = 59.09, SD = 22.24$) measures. However, this increase was not statistically significant. Therefore, the null hypothesis could not be rejected.

Conclusion. Participating in a three-day short-term expressive writing exercise that required participants to respond to a value laden topic did not result in a statistically significant reported reduction in anxiety as evidenced by pre- and post-test differences in scores on the Hostility Scale of the MAACL-R.

Hypothesis Three

“There will be no statistically significant differences within the experimental group between pre- and post-test scores on the Depression Scale of the MAACL-R.”

Findings. Results of a MANOVA indicated no main effect for pre- vs. post-test differences ($F_{(1,83)} = .696, p < .407$) for this measure. Visual analysis of Figure 1 shows that scores decreased slightly between the pretest ($M = 56.05, SD = 15.69$) and post-test ($M = 53.18, SD = 19.41$) measures. However, this decrease was not statistically significant. Therefore, the null hypothesis could not be rejected.

Conclusion. Participating in a three-day short-term expressive writing exercise that required participants to respond to a value laden topic did not result in a statistically significant reported reduction in anxiety as evidenced by pre- and post-test differences in scores on the Depression Scale of the MAACL-R.

Hypothesis Four

“There will be no statistically significant differences within the control group between pre- and post-test scores on the Anxiety Scale of the MAACL-R.”

Findings. Results of a MANOVA indicated no main effect for pre- vs. post-test differences ($F_{(1,83)} = .003, p < .954$) for this measure. Visual analysis of Figure 1 shows that scores increased slightly between the pretest ($M = 49.10, SD = 11.28$) and post-test

($M = 50.03$, $SD = 12.05$) measures. However, this increase was not statistically significant. Therefore, the null hypothesis could not be rejected.

Conclusion. Participating in a three-day short-term expressive writing exercise that required participants to respond to a neutral topic did not result in a statistically significant reported reduction in anxiety as evidenced by pre- and post-test differences in scores on the Anxiety Scale of the MAACL-R.

Hypothesis Five

“There will be no statistically significant differences within the control group between pre- and post-test scores on the Hostility Scale of the MAACL-R.” This hypothesis could not be rejected.

Findings. Results of a MANOVA indicated no main effect for pre- vs. post-test differences ($F_{(1,83)} = .024$, $p < .878$) for this measure. Visual analysis of Figure 1 shows that scores did not change between the pretest ($M = 53.80$, $SD = 19.69$) and post-test ($M = 53.30$, $SD = 18.38$) measures. Therefore, the null hypothesis could not be rejected.

Conclusion. Participating in a three-day short-term expressive writing exercise that required participants to respond to a neutral topic did not result in a statistically significant reported reduction in anxiety as evidenced by pre- and post-test differences in scores on the Hostility Scale of the MAACL-R.

Hypothesis Six

“There will be no statistically significant differences within the control group between pre- and post-test scores on the Depression Scale of the MAACL-R.”

Findings. Results of a MANOVA indicated no main effect for pre- vs. post-test differences ($F_{(1,83)} = .696$, $p < .407$) for this measure. Visual analysis of Figure 1 shows

that scores decreased slightly between the pretest ($M = 52.80$, $SD = 12.42$) and post-test ($M = 49.80$, $SD = 15.71$) measures. However, this decrease was not statistically significant. Therefore, the null hypothesis could not be rejected.

Conclusion. Participating in a three-day short-term expressive writing exercise that required participants to respond to a neutral topic did not result in a statistically significant reported reduction in depression as evidenced by pre- and post-test differences in scores on the Depression Scale of the MAACL-R.

Hypothesis Seven

“There will be no statistically significant differences within the experimental group between pre- and post-test scores of the physical symptoms associated with stress as measured by the PILL.”

Findings. Results of a MANOVA indicated a statistically significant main effect for pre- vs. post-test differences ($F_{(1,83)} = 8.394$, $p < .005$) for this measure. Visual analysis of Figure 1 suggests that scores decreased slightly between the pretest ($M = 56.41$, $SD = 24.59$) and post-test ($M = 50.45$, $SD = 22.75$) measures. However, as evidenced by the follow-up ANOVA calculated to determine the source of the main effect, this decrease was not statistically significant ($F_{(1,44)} = 0.695$, $p < .409$). Therefore, the null hypothesis could not be rejected.

Conclusion. Participating in a three-day short-term expressive writing exercise that required participants to respond to a value laden topic did not result in a statistically significant reported reduction in physical symptoms associated with stress as evidenced by pre- and post-test differences in scores on the PILL.

Hypothesis Eight

“There will be no statistically significant differences within the control group between pre- and post-test scores of the physical symptoms associated with stress as measured by the PILL.”

Findings. Results of a MANOVA indicated a statistically significant main effect for pre- vs. post-test differences ($F_{(1,83)} = 8.394, p < .005$) for this measure. Visual analysis of Figure 1 suggests that scores decreased between the pretest ($M = 58.25, SD = 22.12$) and post-test ($M = 35.15, SD = 22.10$) measures. As evidenced by the follow-up ANOVA calculated to determine the source of the main effect, this decrease was statistically significant ($F_{(1,44)} = 10.914, p < .002$). Therefore, the null hypothesis could be rejected.

Conclusion. Participating in a three-day short-term expressive writing exercise that required participants to respond to a neutral topic resulted in a statistically significant reported reduction in physical symptoms associated with stress as evidenced by pre- and post-test differences in scores on the PILL.

Hypothesis Nine

“There will be no statistically significant differences between the experimental and control group scores for religiosity as measured on the DUREL.”

Findings. The mean score for the experimental group was 21 ($SD = 5.3$) and the mean for the control group was a 22 ($SD = 4.8$). The highest possible composite score for this measure is a 25. Thus, the resulting means indicate that the respondents in both groups reported high levels of religiosity. Results of the independent samples t-test assuming unequal variances indicated no statistically significant differences ($t_{(40)} = .942$,

$p < .352$) between the experimental and control groups for religiosity. Therefore, the null hypothesis could not be rejected.

Conclusion. There were no statistically significant differences between the participants in the experimental group and the control group in terms of their levels of religiosity as evidenced by their responses to the questions on the DUREL.

Hypothesis Ten

“There will be no statistically significant differences post-test between the experimental and control group scores on the Anxiety Scale of the MAACL-R.”

Findings. Results of a MANCOVA indicated no statistically significant main effect for differences between the experimental and control group scores ($F_{(4,33)} = .828, p < .171$) for this measure. Scores varied slightly between the post-test experimental ($M = 49.86, SD = 8.85$) and post-test control ($M = 50.30, SD = 12.05$) groups. This difference was not statistically significant ($F_{(1,36)} = .464, p < .500$). Therefore, the null hypothesis could not be rejected.

Conclusion. Participating in a three-day short-term expressive writing exercise that required participants to respond to a value laden or a neutral topic did not result in a statistically significant difference between the experimental and control groups scores on the Anxiety Scale of the MAACL-R. This result suggests that there was no difference in the levels of anxiety reported by the two groups following their participation in the expressive writing activities.

Hypothesis Eleven

“There will be no statistically significant differences post-test between the experimental and control group scores on the Hostility Scale of the MAACL-R.”

Findings. Results of a MANCOVA indicated no statistically significant main effect for differences between the experimental and control group scores ($F_{(4,33)} = .828, p < .171$) for this measure. Means varied slightly between the post-test experimental ($M = 59.09, SD = 22.24$) and post-test control ($M = 53.30, SD = 18.38$) groups. This difference was not statistically significant ($F_{(1,36)} = .504, p < .482$). Therefore, the null hypothesis could not be rejected.

Conclusion. Participating in a three-day short-term expressive writing exercise that required participants to respond to a value laden or a neutral topic did not result in a statistically significant difference between the experimental and control groups scores on the Hostility Scale of the MAACL-R. This result suggests that there was no difference in the levels of hostility reported by the two groups following their participation in the expressive writing activities.

Hypothesis Twelve

“There will be no statistically significant differences post-test between the experimental and control group scores on the Depression Scale of the MAACL-R.”

Findings. Results of a MANCOVA indicated no statistically significant main effect for differences between the experimental and control group scores ($F_{(4,33)} = .828, p < .171$) for this measure. Means varied slightly between the post-test experimental ($M = 53.18, SD = 19.41$) and post-test control ($M = 49.80, SD = 15.70$) groups. This difference was not statistically significant ($F_{(1,36)} = 0, p < .998$). Therefore, the null hypothesis could not be rejected.

Conclusion. Participating in a three-day short-term expressive writing exercise that required participants to respond to a value laden or a neutral topic did not result in a

statistically significant difference between the experimental and control groups scores on the Depression Scale of the MAACL-R. This result suggests that there was no difference in the levels of depression reported by each group following their participation in the expressive writing activities.

However, a statistically significant difference was obtained for the pre- vs. post-test comparison when the group scores were combined and analyzed ($F_{(4,33)} = 12.64, p < .001$). This finding suggests that the participants experienced an overall decrease in reported depression as evidenced by the difference in their responses pre-writing intervention and post-writing intervention.

Results of a bivariate correlation indicated that participants that reported obtained lower scores on the DUREL reported higher pretest scores on the Depression scale of the MAACL-R ($r = -.322, p < .019$). This result suggests that higher levels of religiosity are related to lower levels of depression.

Hypothesis Thirteen

“There will be no statistically significant differences post-test between the experimental and control group scores of the physical symptoms associated with stress as measured by the PILL.”

Findings. Results of a MANCOVA indicated no statistically significant main effect for differences between the experimental and control group scores ($F_{(4,33)} = .828, p < .171$) for this measure. However, means varied statistically significantly between the post-test experimental ($M = 50.45, SD = 22.75$) and post-test control ($M = 35.15, SD = 22.10$) groups. This difference was statistically significant ($F_{(1,36)} = 4.44, p < .042$). Therefore, the null hypothesis could be rejected.

Conclusion. Participating in a three-day short-term expressive writing exercise that required participants to respond to a value laden or a neutral topic did result in a statistically significant difference between the experimental and control groups scores on the PILL. This result suggests that there was a difference in the physical symptoms reported by the two groups following their participation in the expressive writing activities with the control group reporting statistically significantly fewer physical symptoms.

Summary of Findings and Conclusions

Hypotheses 1 through 8 detailed comparisons of the pre- vs. post-test scores for the three subscales of the MAACL-R and the PILL for the experimental group and the control group. These within group comparisons did not find a statistically significant main effect for group membership. However, a statistically significant finding for the pre- vs. post writing intervention responses to the PILL resulted. Specifically, the findings indicate that the control group had statistically significantly lower scores on the PILL following the writing intervention. This finding suggests that the act of engaging in the intervention may have reduced physical symptoms for the control group.

Hypotheses 9 through 13 detailed comparisons between the experimental and control groups for scores on the DUREL, the post-test scores of the three subscales of the MAACL-R, and the post-test scores on the PILL. The multivariate tests indicated two main effects for covariates but no main effect for group membership. Despite the lack of a main effect for group, pairwise comparisons and a follow-up ANOVA indicated a statistically significant difference between the experimental and control groups reported post-test scores on the PILL with the control group reporting lower scores. Additionally,

the main effect for the pretest and post-test responses on the dependent measures indicated that a change in responses did occur following the writing intervention most notably on the MAACL-R Depression subscale. Further investigation of the relation of religiosity to each of the measures indicated that there is a statistically significant negative relation between scores on the DUREL and the MAACL-R Depression subscale. This negative relation suggests that participants who reported lower levels of religiosity also reported higher levels of depression as measured on the MAACL-R Depression subscale. The possible implications of these findings and conclusions follow.

Discussion

The purpose of this study was to investigate the use of a short-term expressive writing intervention using a value laden topic and a neutral topic for the reduction of anxiety and the physical symptoms associated with stress to participants who are Orthodox Jewish wives preparing for a religious observance. Participants were divided into an experimental group, who wrote on a value-laden topic, and a control group, who wrote on a neutral topic. Both groups wrote on three consecutive days for fifteen minutes per writing. In order to investigate whether each group benefitted from engaging in a writing intervention independent of the writing prompt, analysis was conducted to determine if participants within each group reported statistically significantly different scores prior to the writing intervention and following the writing intervention. Analysis was also conducted to determine if the writing prompt elicited statistically significant differences in reported scores by comparing reported post-test scores between the experimental and control groups using the pretest scores as the covariate. Additionally, information was gathered to determine if the reported levels of religiosity for the

participants did not statistically significantly differ between the experimental and control groups. Additionally, levels of religiosity were compared to the pre- and post-writing scores on each of the measures to determine if there was any relation between religiosity, anxiety, depression, hostility, and reported physical symptoms associated with stress. Interpretations of the various findings will be discussed in the context of the relevant literature.

Benefits of Expressive Writing

There have been many studies conducted using expressive writing interventions where participants have reported statistically significant improvements in their physical well-being (Pennebaker, 1997; Pennebaker & Beall, 1986; Esterling, Antoni, Fletcher, Margulies, & Schneiderman, 1994; Greenberg & Stone, 1992; Pennebaker, Colder, & Sharp, 1990). Results of the current study add to the literature as analyses indicated a statistically significant reduction in reported physical symptoms as evidenced by a decrease in scores on the PILL for the control group following the writing intervention. Participants in the control group apparently achieved a reduction in their physical symptoms of stress from the experience of writing in response to the prompts they received. However, a similar result was not achieved for the group who responded to a value-laden topic. Possibilities for the discrepancy between the results related to the different writing prompts will be discussed under *Possible Contributors to Non-Statistically significant Findings*.

Evidence taken from the literature also shows that participants can achieve improved psychological states including reduced anxiety with the use of expressive writing intervention (Slone & Marx, 2004; Batten, Follette, Hall, & Palm 2002).

Unfortunately, results of the current study did not extend the findings on expressive writing as a means of reducing anxiety. Participants also did not report a change in feelings of hostility as a result of their participation in the writing intervention. However, results of the current study add to the literature as analyses indicated a statistically significant difference in scores obtained prior to the writing intervention and scores obtained following the writing intervention on the Depression Scale of the MAACL-R. Participants in both groups apparently received a psychological benefit as they reported a reduction in depression scores from the experience of writing in response to the prompts they received.

Taken together, results of the current study add to the existing literature that short-term expressive writing can result in a reduction in the physical symptoms of stress as well as a reported improvement in psychological state as evidenced by the decrease in scores on the PILL for the control group, and the Depression Scale of the MAACL-R.

Benefits of Religiosity

Reported outcomes for several studies indicate that higher levels of religiosity serve as a predictor of improved ethical choices, as well as decreased levels of defensiveness, anxiety, and stress (Storch, Storch, Kovacs, Okun, & Welsh, 2003; Storch & Storch, 2001; Steffen & Fearing, 2007; Roff, Butkeviciene, & Klemmack, 2002; Dedert, Studts, Weissbecker, Salmon, Banis, & Sephton, 2004; Ironson, Balban, O'Cleirigh, Kumar, Larson, & Woods, 2001). One of the underlying purposes of this study was to investigate whether participants with high levels of religiosity could benefit from engaging in a short-term expressive writing intervention. It was posited that the necessarily high level of religiosity needed to be an Orthodox Jewish wife would have a

potentially unique influence on the data. Results from the current study extend the existing literature on the role of religiosity and mental health. Results indicated that the participants who reported lower levels of religiosity also obtained higher scores on the pre-writing measure of depression. Interestingly, there was no relationship between the religiosity scores and the post-writing measures. This result suggests that whatever relation religiosity and depression scores had prior to the writing did not exist following the writing.

Possible Contributors to Non-Statistically significant Findings

The most logical explanation of the non-statistically significant findings in the comparisons of the experimental and control groups is that the questions used for the writing prompts did not elicit the desired effects for the different groups. There are several possibilities of where the breakdown occurred, 1) the experimental group received the same prompt for all three days, 2) focusing the experimental groups efforts on religious observance did not result in a lessening of psychological or physical symptoms, and 3) the prompt questions the control group received were not neutral. Each possibility will be discussed in greater detail.

Same prompt for three days

Participants assigned to the experimental group were asked to, “What do you find gratifying about preparing for a religious observance and do you feel it adds to your enlightenment?” The underlying principal for using this prompt was to focus the participants writing on the purposes for ritual and religious observance. By continuing with the prompt for all of the writings, it was hoped that the participants would go beyond the surface answers and engage in an honest dialogue about the deeper religious

significance of the religious observance. Focusing on the deeper meaning was hoped to tap into the benefits of high levels of religiosity (VandeCreek, Janus, Pennebaker, & Binau, 2002).

Another possible limitation of writing on the same prompt for three consecutive days may have been that the participants became bored with the topic. Visual analysis of Figure 1 shows that participants in the experimental group actually had higher scores on the Hostility Scale of the MAACL-R post-writing intervention. Although the difference in scores was not statistically significant, it may suggest that participants in the experimental group actually became more irritated over the course of their participation. It makes sense that increased hostility would not foster statistically significant decreases on any of the other measures. An additional possibility may be related to the question for the experimental group focusing on the religious observances.

Focus on religious observance

The experimental group was prompted to focus on how the preparation for the observances contributed to their enlightenment. The prompt attempted to focus the experimental group's writing on the positive purposes of the preparations. However, the prompt may have not been sufficiently positive to foster any improved sense of well-being for the participants. Additionally, it is possible that by focusing on the religious observances, writing may have been centered around the potential source of their stress. By asking the participants to write about how the preparations contribute to deeper religious observance, the prompt may not have allowed for either enough latitude to truly address religious observance as a source of stress. Previous studies indicate that individuals who fully engage in the writing process and embrace the letting-go

experience receive the greatest health benefit (Pennebaker, 1997a; Pennebaker, Colder, & Sharp, 1990). The writing prompt may have been too ambiguous to inspire deeper introspection. Another potential confound could be that the prompt did not encourage participants to truly process a source of stress. Another possibility for the lack of between group findings could be due to the nature of the prompts provided to the control group.

Not neutral prompts

Every effort was made to construct writing prompts for the control group that did not elicit a great deal of emotion and had no bearing on religious observance. In an attempt to fulfill those parameters, participants assigned to the control group were asked to respond to, “What things do you do with your family for entertainment?”, “In what ways does your family work together?”, and “Describe the location where you are currently writing”. It is possible that the participants benefited from the opportunity to not contemplate the role of religion in their lives and instead were asked to focus on topics that are tangential to religious observance. Burton and King (2004) conducted research that explored the health benefits of expressive writing, specifically expressive writing about positive experiences, and its relation to general health benefits. The results of the study showed enhanced positive moods and fewer health center visits due to illness for the group that wrote about positive experiences as compared to the group that wrote about neutral topics. Asking the participants to focus on the positive aspects of family life such as being together for fun events and working together to accomplish goals, may have been sufficiently positive enough writings to foster an increased sense of well-being

for the participants. Discussion of the weaknesses in the design of the writing prompts leads to areas to direct future research.

Future Research Directions

There are areas of weakness that are apparent with the current study that would benefit from being changed in future studies of this topic. Some potential methodological changes include, 1) modifying the writing prompts, 2) collecting and analyzing the writing samples, 3) widen and increase the population for sampling, and 4) including a non-writing group. A more detailed description of these changes follows.

Modified writing prompts

As discussed previously, it is possible that the writing prompts used were not able to facilitate the desired effects for either the experimental or control group. Potential ways to address the problem in future research would be to either pilot the prompts prior to use for investigation or have participants rate the prompts following the writing. If prompts were piloted on a representative sample of participants, the experimenter could ascertain what type of emotional response the prompts elicited. Based on the writing done by the participants a given prompt could be rated as inducing negative emotions, positive emotions, or neutral feedback. It is possible that if the sampling for prompts were done in a planned and systematic way that the data collected would allow for the creation of a databank for writing prompts to use in subsequent experimental research. Another possibility would be to have participants rate the prompts following the completion of the daily writing.

Participants could be asked to rate a particular prompt following their writing on parameters such as, "To what degree did your writing focus on negative thoughts and

feelings?”, or “To what degree did your writing focus on positive thoughts and feelings?”. Participants could rate the intensity of feeling using a Likert scale. The information obtained from the rating would be instructive for the purposes of constructing better prompts for future studies. Additionally, the information could potentially be used as a covariate during analysis in an attempt to control for varying degrees of responses by individual participants. Vital information necessary to gauge the reliability of the prompts in eliciting emotional response could also be obtained from the writing sample itself.

Collecting Writing Samples

A distinct area of weakness in the current study was not requiring participants to submit their writing. Speculation regarding possible reasons for the non-statistically significant findings between groups should also include the fact that individual writing samples were not collected. Participants were not asked to submit their writing samples in an attempt to ensure that each person would have full confidence in the anonymity of her participation. The population of participants the current study sought is an intensely private group. It was felt that requiring writing samples to be submitted would have drastically reduced the number of women who would have participated. Since the population to draw a research sample from is small to begin with, it was determined that procedures that would potentially limit participation would have been catastrophic to data collection.

Unfortunately, by not requiring submission of the samples, it is unknown whether the participants actually engaged in the writing. It also did not allow for analysis of the writing itself to determine the extent to which the participants used emotional language.

Data from the samples themselves would have assisted in assessing the reliability of the prompts to elicit the targeted emotions. In all research, the experimenter must balance all of the factors in order to ensure participation and reliability of data collection. Potential ways to have ensured a larger number of participants could have been to recruit both strictly observant and less observant participants as well as offering both a paper and internet version to participants.

Widen the Population

Future research should seek to expand the population of individuals to be included in a research sample. A potential way to ensure an adequate number of participants for research purposes would be to expand the inclusion parameters to include women who identify themselves as practicing tenets associated with the Conservative Jewish movement. Many people associated with Conservative Judaism maintain a high level of religious observance. Information obtained on the DUREL would provide information as to whether it was even necessary to separate participants into groups based on religious affiliation. A much larger number of American Jewish people would describe themselves as members of the Conservative movement. By expanding inclusion criteria to include Conservative Jewish wives, a much larger pool of participants would be available. Participation was also limited by the use internet only data collection.

Another possible way to expand the population available to draw a sample from would be to provide a paper version of the directions and measures to individuals. Some members of the Orthodox Jewish community choose not to have internet access. Other individuals simply feel more comfortable using a paper interface than a computer interface. Paper versions could be picked up from a convenient location and returned to

either the same location or a different one. Anonymity could still be ensured by having a drop-off point where participants could leave their data without the investigator knowing who provided the information. Widening the population through the inclusion of members of the Conservative movement and providing a paper option for participation would improve the external validity of the study. Using a larger population would also provide the opportunity to strengthen the research design by adding an additional grouping variable.

A Non-Writing Group

Repeated measures designs are improved by adding a control group whenever possible. For the short-term expressive writing paradigm, the control group would constitute a group that does not participate in any type of writing. This non-writing group would complete all of the pre-writing measures the same as the experimental and control groups. The difference would be that participants assigned to the non-writing group would not receive a writing prompt. They would be told to return in the prescribed amount of time to complete the post-measures. Adding a non-writing group would strengthen the reliability of the design. The non-writing group data could be used as a covariate to help control for a placebo effect of engaging in writing. It would also help level any effects resulting from problems with the writing prompts.

Summary

This study was a repeated measures experimental study of the use of short-term expressive writing with a group of Orthodox Jewish wives. The purpose of this study was to investigate the use of Pennebaker's short-term expressive writing intervention (1996) for the reduction of anxiety and the physical symptoms associated with stress with

participants who are Orthodox Jewish wives preparing for a religious observance. Prior to participants responding to a writing prompt, demographic data including scores on the DUREL, was obtained. Additionally, prior to writing, data were collected on the variables associated with psychological state and physical symptoms of stress. Following the three days of writing, data were collected on the variables associated with psychological state and physical symptoms of stress. The results of this study extend the literature available on the use of short-term expressive writing as a therapeutic intervention to reduce feelings of depression as well as reduce physical symptoms associated with stress. Results of the study also extend the literature on the health benefits that seem to be an intrinsic part of having a high degree of religiosity. The combined contribution of the results of this study indicates that short-term expressive writing can provide benefits to individuals who are deeply religious.

CHAPTER VI
MANUSCRIPT

An Exploration of the Use of Expressive Writing to Reduce Physical and Emotional
Symptoms Associated with Stress in a Sample of Orthodox Jewish Wives Preparing for a

Religious Observance

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ABSTRACT

The purpose of the study was to determine the effects of a short-term expressive writing intervention on the physical and psychological well-being of a group of Orthodox Jewish wives preparing for a religious observance. Participants ($N = 42$) were assigned to the experimental group ($n = 22$) and to the control group ($n = 20$) on a rotating basis. The physical well-being of participants was measured by reduced scores on the PILL for physical symptoms associated with stress. Psychological well-being was measured by using the subscale scores on the MAACL-R for anxiety, hostility, and depression. Results indicated a possible improvement in psychological well-being and a reduction in physical symptoms following the writing intervention.

An Exploration of the Use of Expressive Writing to Reduce Physical and Emotional Symptoms Associated with Stress in a Sample of Orthodox Jewish Wives Preparing for a Religious Observance

Therapists and clients are constantly seeking to find therapies and therapeutic techniques to aid in the therapeutic process. There are many ways that clients can engage themselves in the introspection needed to bring about the necessary awareness to bring about behavioral change. One possible resource is the use of expressive writing as a means of processing thoughts and emotions. Many empirical studies have been conducted using expressive writing as a means of therapeutic intervention (e.g., Batten, Follette, Hall, & Palm, 2002; Beckwith McGuire, Greenberg, & Gevirtz, 2005; Burton, & King, 2004; Creswell, Lam, Stanton, Taylor, Bower, & Sherman, 2007; Pennebaker, 1997a; Pennebaker, 1997b; Pennebaker & Chung, 2007). Participants for the research have varied from individuals who are non-distressed (e.g., Slatcher & Pennebaker, 2006; and Slone & Marx, 2004), to participants who are incarcerated in a psychiatric prison (Richards, Beall, & Pennebaker, 2000). Regardless of the participant pool, results suggest that expressive writing interventions can aid in the wellbeing of those who use the intervention.

Studies have also indicated that a high degree of religiosity contributes to feelings of wellbeing and promotes positive outlook (Dedert, Studts, Weissbecker, Salmon, Banis, & Sephton, 2004; Ironson, Balban, O'Cleirigh, Kumar, Larson, & Woods, 2001; Roff, Butkeviciene, & Klemmack, 2002). However, there is scant research on the effects of expressive writing on the well-being of highly religious people. Among religious groups

that participate in a high level of religious observance, are people who practice the tenets of Orthodox Judaism.

There is a paucity of research available regarding the Orthodox Jewish population, and even less research done with the Orthodox Jewish population in the area of counseling. It is possible that the level of religiosity and spirituality of the participants contributes in a unique way to the response to intervention. Research by VandeCreek, Janus, Pennebaker, and Binau (2002) reported that for some people prayer is a form of disclosure and provides similar benefits. Additionally, case study research reports that the structure of Orthodox Judaism provided an outlet for de-stigmatizing mental illness and created a religious structure for three men suffering from paranoid schizophrenia to process and deal with the pain of their disorder (Heilman & Witztum, 2000). Therefore, the use of short-term expressive writing intervention was hypothesized to be a potential outlet for strengthening the benefits of religious observance and providing a means of processing the psychological and physical stress associated with the preparation for a religious observance.

This study was conducted to determine if the use of a short-term expressive writing intervention would result in a reduction of affective states and physical symptoms associated with stress for participants who are Orthodox Jewish wives preparing for a religious observance. Additionally, this study was conducted to provide information on the potential benefits of short-term expressive writing intervention for participants with a high degree of religiosity.

Method

Participants

Participants were 42 wives who attend services at an Orthodox Jewish synagogue. This study's protocol was approved by the Institutional Review Board of Old Dominion University, Norfolk, VA. Participation in this project was voluntary and confidential. All participants in this study were provided information about the research including parameters of participation. All participants gave their informed consent. Participants were recruited using the email addresses of wives attending services at the B'Nai Israel Orthodox Synagogue in Norfolk, Virginia, as well as email addresses of wives who are congregants at multiple orthodox synagogues in the Baltimore, Maryland area. Additional participants were obtained through word-of-mouth communication among wives at the various synagogues.

Group Assignment

Participants ($N = 42$) were assigned to the experimental group ($n = 22$) and to the control group ($n = 20$) on a rotating basis, in the order of which they first logged into the survey website. Participants were not assigned a specific time to log in on the first day of data collection. The daily limits for participation were 12:00 midnight until 11:59 PM later that day. Consequently, a participant had an equal chance of being assigned to the experimental group as the control group for this study. Both groups filled-out and submitted a demographic questionnaire, which did not contain any information that will allow for the identification of the subjects. Additionally, both groups filled-out and submitted the DUREL, the MAACL-R, and the PILL, along with three short-term expressive writing samples.

The Need for Confidentiality and Anonymity and How This Was Addressed

Because the community of wives that could participate in this study is small, ensuring confidentiality was a critical component for the women's willingness to participate. Therefore, ensuring that information and essays could not be readily attributed to any particular individual was a vital part of getting the wives to commit to being part of the project. Both the experimental and control groups filled-out all information via a web-based interface, which was designed to allow participants to create their own username and password. These self-created identifiers allowed participants to log in and complete the appropriate questionnaires and surveys on three separate occasions, while keeping the information associated with the same participant. The short-term expressive writing samples could have been written in an electronic format via the participant's text editing software, via a web note pad that was included on the data collection website, or via paper and pencil. The writing samples themselves were not collected by the researcher, rather the samples stayed in the possession of the participants.

Writing Prompts

The control group members followed the same procedures as the intervention group participants, with the writing prompt being the only area of difference.

On day 1, all participants were provided the following instructions, after they complete the pre intervention data collection.

Over the next three days, please write about your thoughts and feelings about the topic provided below. Do not worry about grammar, spelling, or sentence structure. Remember, no one will see your writings but you, so it is important

that you feel free to explore your feelings and thoughts about your topic. You may choose to write about the same topic for all three days, or to write about the something different each time.

Please find a comfortable place to write, relatively free from distractions such as phones and interruptions, and be alone with your thoughts, if possible. Once you begin writing, continue to write for the entire 15 minutes. When 15 minutes have elapsed, your writing should cease.

The experimental group was provided the following as their writing prompt, “What do you find gratifying about preparing for a religious observance and do you feel it adds to your enlightenment?” On day 1, the control group was provided with the writing prompt, “What things do you do with your family for entertainment?” On day 2, the control group was provided with the writing prompt, “In what ways does your family work together?” On day 3, the control group was provided with the writing prompt, “Describe the location where you are currently writing.”

On days two and three, the instructions for both groups were altered to read, “Please find a comfortable place to write and be alone with your thoughts, if at all possible. Once you begin writing, continue to write for the entire 15 minutes. When 15 minutes have elapsed your writing should cease.”

Instrumentation

The instruments used were the Duke University Religion Index , Multiple Affect Adjective Checklist - Revised, and the Pennebaker Inventory of Limbic Languidness. Each survey instrument will be discussed in greater detail.

Duke University Religion Index (DUREL). Koenig, Parkison, and Meador (1997a). The authors created the DUREL as a measure to assess multiple dimensions of religion in a brief but comprehensive format. Storch, Roberti, Heidergerken, et al. (2004) described the DUREL as a five-item self-report scale that assesses the organizational, non-organizational, and intrinsic dimensions of religiousness. Storch, Roberti, Heidergerken, et al. also provided definitions of each of the items as follows:

Organizational religiosity is measured by one-item and defined as the frequency with which one attends formal religious services. Non-organizational religiosity is measured by one-item and defined in terms of the amount of time spent in private religious activities such as prayer or meditation. Intrinsic religiosity is measured by three-items and conceptualized as the degree to which one integrates their religiousness into their life. Assessment of the organizational and non-organizational dimensions is based upon the response to the respective individual item (Koenig, Parkerson, & Meador, 1997b). Koenig et al. (1997b) suggest that the intrinsic religiosity items be added to derive a composite subscale score.

Adhering to the scoring guidelines yields possible composite scores between 1 and 25 with higher scores indicating higher levels of overall religiosity. Storch, Strawser, and Storch's 2004 investigated the two-week test-retest reliability of the Duke Religion Index. The study consisted of 20 undergraduates, 11 of whom were women. The participant's mean age were 24.7 yr. ($SD = 5.0$ yr.). The findings of this study supported the two-week test-retest reliability, with an intraclass correlation coefficient of .91. Storch, Roberti, Heidgerken, Storch, Lewin, Killiany, Baumeister, Bravata, and Geffken (2004) found that a "significant, positive correlation was found between the Duke

Religion Index and a measure of religious beliefs, supporting the convergent validity of the DRI. These findings provide further support for the reliability and construct validity of the DRI.”

The Multiple Affect Adjective Checklist (MAACL; Zuckerman & Lubin, 1965).

The MAACL was revised into a checklist of a 132 adjectives items where those surveyed are asked to check the adjectives that correspond to how they are feeling at that moment (MAACL-R; Zuckerman & Lubin, 1985). As explained by Craig (2005), the MAACL-R requires reading abilities that are at least at the sixth-grade level (Lubin & Van Whitlock, 1995). However, it has been adapted to accommodate readers at the fourth-grade level (Van Whitlock, 1998; Van Whitlock & Lubin, 1998). A short form of the MAACL-R has been developed that is comprised of a survey that consists of a 66 adjective checklist. The short form of the MAACL-R has a nearly identical internal consistency to the long form, with a correlation between the two forms ranging between .84 and .94 (Lubin et al., 2001). Therefore, in this study, the short form of the MAACL-R was used.

According to Craig (2005), the MAACL-R is designed to measure both positive and negative affects. Positive affect is described by words such as loving, friendly, and affectionate. Negative affect is described by words such as anxiety, depression, and hostility. A Sensation-Seeking scale is another component of the MAACL-R, which addresses more energetic aspects of positive mood such as feeling adventurous or enthusiastic. Additionally, the test has a bipolar scale of Dysphoria. The Dysphoria component includes the sub-scales of Anxiety, Depression, Hostility, and Positive Affect, which also includes the Sensation Seeking subscale (Craig, 2005).

As summarized in Craig (2005), the reliability of the MAACL-R has acceptable levels of temporal reliability and validity (Lubin, Swearngin, & Zuckerman, 1997; Lubin & Zuckerman, 1999). The Alpha coefficients for the MAACL-R range between .70 to .90 for the Positive Affect and the Dysphoria scales. Alpha coefficients range from .49 to .81 in state mood (how one currently feels). Coefficients range from .07 to .63 in trait ratings (how one generally feels) and for the Sensation Seeking scale (Zuckerman & Lubin, 1985).

The Pennebaker Inventory of Limbic Languidness (PILL.) The PILL is a 54-item instrument that is designed to measure the number of times the participant reports having experienced a group of common physical symptoms and sensations. Participants are asked to rate the frequency of occurrence of the 54 items using a five-level Likert scale. Scores on the Likert-Scale range from a low “A” response of “have never or almost never experienced” to an “E” response of “more than once every week.” The inventory may be scored by totaling the number of C, D, or E responses, which indicates that the individual is experiencing a symptom at least once a month and up to more than once a week. For the PILL, the Cronbach alphas range from .88 to .91 and the 2-month test-retest reliability range from .79 to .83.

Data Analysis

The nature of the data collection and the scores that result lend themselves to quantitative analysis using both descriptive and inferential statistical methods. The data collected from the demographic questionnaire is used to describe the participants. Survey data were collected as the dependent variables for the experimental and control groups.

Demographic data

Each participant was asked 10 questions designed help describe the participants of this study : (1) What is your age; (2) Check all that apply to you (married, have been divorced, have been widowed); (3) What types of school(s) did you attend from kindergarten until receiving you high school diploma or equivalent [home school, private school (religious), private school (secular), public school, other]; (4) Highest degree earned (high school diploma or equivalent, bachelor's degree, master's degree, doctorate, other); (5) Ethnic group designation; (6) What is the primary language spoken in your household; (7) In what country do you currently reside; (8) How many people are you preparing for the observance for; (9) Were you raised in an observant household; and (10) How many females are in your household above the age of 12 for the observance. Additionally, the DUREL was completed by each participant prior to short-term expressive writing intervention. As described previously, the DUREL served as a measure of religiosity.

Survey Data

Each of the surveys yields a composite score that is interval in nature. The MAACL-R and the PILL were completed by each participant at the beginning of the study prior to participation in the short-term expressive writing intervention and at the conclusion of the study following the completion of the short-term expressive writing interventions.

Statistical analysis

Demographic data were analyzed to determine if statistically significant differences existed between the experimental and control groups using contingency tables

resulting in a Pearson Chi Square statistic. Pre short-term expressive writing intervention scores MAACL-R, and PILL were compared to post short-term expressive writing intervention scores on these measures within the experimental and control groups using a multivariate analysis of variance (MANOVA). Between group differences on the DUREL were analyzed using an independent samples t-test. Post short-term expressive writing intervention scores MAACL-R, and PILL were compared between the experimental and control groups using a multivariate analysis of covariance (MANCOVA) with group membership as the independent variable and scores on the surveys as the dependent variables. Pretest scores on the MAACL-R and PILL were used as the covariate to control for any pre intervention differences between the groups. Univariate ANOVA was used for follow-up where appropriate.

Results

Findings Related to Within Group Differences

A multivariate analysis of variance (MANOVA) was calculated to explore potential differences within the experimental and control groups related to responses given pre-writing intervention and post-writing intervention for each of the dependent measures. Pretest and post-test short-term expressive writing intervention scores on the MAACL-R subscales of Anxiety, Hostility, and Depression, as well as the PILL were compared for the experimental and control groups.

Levene's Test of equality of error variances was used to determine if the groups had similar variances for each instrument. Results of Levene's test indicated no statistically significant differences in error variances for the PILL ($F_{(3,80)} = .271, p < .846$), MAACL-R Anxiety subscale ($F_{(3,80)} = 1.087, p < .359$), MAACL-R Depression

subscale ($F_{(3,80)} = .973, p < .410$), and MAACL-R Hostility subscale ($F_{(3,80)} = .712, p < .547$). A non-statistically significant difference for this test indicates that the variances of each of the dependent measures do not violate the assumption of equal variances necessary to use the MANOVA statistic.

Wilks' Lambda was chosen to determine if there were any main effects for group, test time, and interaction of group and test time. There were no statistically significant multivariate effects for Group ($F_{(4,33)} = 1.711, p < .171$) which indicates that there were no statistically significant differences between the experimental and control groups for any of the measures. Statistically significant Wilks' Lambda values were found for the Pre- vs. Post-test responses on the measures ($F_{(4,77)} = 2.579, p < .044$) indicating a main effect for when the measures were filled out. This result indicates that when group membership was not accounted for, a statistically significant difference between the pretest and post-test measures resulted. There was no statistically significant interaction between the pretest and post-test measures when compared by group (i.e., experimental and control; $F_{(4,77)} = 1.224, p < .308$).

A statistically significant multivariate main effect was found for the Pre- vs. Post-test factor. Follow-up ANOVAs were calculated to determine the source of these main effects. A Bonferroni correction was calculated for the 4 resulting comparisons reducing a statistically significant p value to $p < .013$. Results indicate statistically significant differences between the Pretest and Post-test scores on PILL ($F_{(1,83)} = 8.394, p < .013$).

Pairwise comparisons of the marginal means for the pre- vs. post-test responses (collapsed for groups) on the PILL indicated a statistically significant difference of 14.527, $p < .005$. Follow-up ANOVA to determine the source of the difference indicated

no statistically significant difference on pre- vs. post-test responses for the experimental group ($F_{(1,44)} = 0.695, p < .409$). However, a statistically significant difference on pre- vs. post-test responses for the control group ($F_{(1,44)} = 10.914, p < .002$) was observed. Although there is no statistically significant difference between the experimental and control group for this measure, the statistically significant difference indicated by the follow-up ANOVA and pairwise comparison indicate a reported reduction in physical symptoms for the control group post writing intervention.

Findings Related To Between Group Differences

The DUREL was completed by each participant prior to receiving a writing prompt. As described previously, the DUREL served as a measure of religiosity with higher obtained scores indicating higher degrees of religiosity. Between group differences on the DUREL were analyzed using an independent samples t-test. The mean score for the experimental group was 21 ($SD = 5.3$) and the mean for the control group was a 22 ($SD = 4.8$). The highest possible composite score for this measure is a 25. Thus, the resulting means indicate that the respondents in both groups reported high levels of religiosity. Results of the independent samples t-test assuming unequal variances indicated no statistically significant differences ($t_{(40)} = .942, p < .352$) between the experimental and control groups for religiosity.

Results of a bivariate correlation between scores on the DUREL and pre- and post-test scores on the MAACL-R subscales of anxiety, depression, and hostility as well as the PILL are provided in Table 7. A bivariate correlation was computed to determine if participants' reported levels of religiosity was related to their reported levels of depression, anxiety, hostility, and/or physical symptoms of stress prior to the writing

intervention and following the writing intervention. Results indicated no statistically significant relation between scores on the DUREL and pretest scores on the MAACL-R subscales of Anxiety ($r = -.06, p < .347$) and Hostility ($r = -.233, p < .069$). Likewise no statistically significant relation between scores on the DUREL and pretest scores on the PILL was indicated ($r = -.188, p < .117$). However, results indicated a statistically significant relation between scores on the DUREL and pretest scores on the MAACL-R Depression subscale ($r = -.322, p < .019$). This result indicates that as reported levels of religiosity decreased reported levels of depression increased.

Results indicated no statistically significant relation between scores on the DUREL and post-test scores on the MAACL-R subscales of Anxiety ($r = -.131, p < .408$), Depression ($r = .042, p < .794$), and Hostility ($r = .012, p < .940$). Likewise no statistically significant relation between scores on the DUREL and post-test scores on the PILL was indicated ($r = -.155, p < .327$).

Post short-term expressive writing intervention scores on the MAACL-R subscales of Anxiety, Hostility, and Depression, as well as the PILL were compared between the experimental and control groups using a multivariate analysis of covariance (MANCOVA) with group membership as the independent variable and scores on the instruments as the dependent variables. Follow-up analyses consisted of univariate ANOVA where appropriate. Pretest scores on the MAACL-R subscales and PILL were used as the covariate to control for any pre intervention differences between the groups.

Box's M was calculated to ensure that the covariances of the measures were not statistically significantly different. Results of Box's M were not statistically significant

($M = 19.95, p < .06$). Therefore, there is insufficient evidence that the covariance matrices differ indicating that results from follow-up ANOVAs may be interpreted.

Levene's Test of equality of error variances was used to determine if the groups had similar variances for each instrument. Results of Levene's test indicated no statistically significant differences in error variances for the Post-Test PILL ($F_{(1,40)} = .335, p < .566$), Post-Test MAACL-R Anxiety subscale ($F_{(1,40)} = 2.77, p < .57$), Post-Test MAACL-R Depression subscale ($F_{(1,40)} = .116, p < .74$), and Post-Test MAACL-R Hostility subscale ($F_{(1,40)} = .895, p < .35$). A non-statistically significant difference for this test indicates that the variances of each of the dependent measures do not violate the assumption of equal variances necessary to use the MANCOVA statistic.

Wilks' Lambda was chosen to determine if there were any main effects for group or for the covariates (i.e., the pretest scores on each of the survey instruments). For the independent factor of group membership (i.e., experimental vs. control), there was no statistically significant multivariate effect ($F_{(4,33)} = 1.711, p < .171$). This finding indicates that there were no statistically significant main effects for differences between the experimental group and the control group on the measures. However, pairwise comparisons of the marginal means for the experimental group's post-test responses vs. the control group's post-test responses on the PILL indicated a statistically significant difference of 13.570, $p < .042$. Follow-up ANOVA to determine the source of the difference indicated a statistically significant difference ($F_{(1,36)} = 4.44, p < .042$).

Statistically significant Wilks' Lambda values were found for the Pretest MAACL-R Depression subscale ($F_{(4,33)} = 12.64, p < .001$), and the Pretest MAACL-R Hostility subscale ($F_{(4,33)} = 4.65, p < .004$) indicating a main effect for these two

covariates. The main effect for the covariates does not make a distinction between the experimental and control groups.

Follow-up ANOVAs were calculated to determine the source of the main effect for the Pretest MAACL-R Depression subscale and the Pretest MAACL-R Hostility subscale. A Bonferroni correction was calculated for the 8 resulting comparisons reducing a statistically significant p value to $p < .006$.

Results indicate statistically significant differences between the Pretest and Post-test scores on the MAACL-R Depression subscale ($F_{(1,36)} = 53.612, p < .006$). The statistically significant difference between the reported pre- and post-intervention scores suggests that the participants reported reduced levels of depression regardless of whether they were assigned to the experimental or control group.

Results for the Pretest MAACL-R Hostility subscale indicate statistically significant differences between the subscale and the Post-test subscale score for MAACL-R Depression ($F_{(1,36)} = 17.201, p < .006$). Although the main effect for the difference between the Depression subscale and the Hostility subscale is statistically significant, there are no statistically significant interpretations. That is to say, that it is unlikely that the pretest score on the Depression subscale related in any meaningful way to the post-test score on the Hostility subscale.

Summary of Findings

Findings were divided into those related to the demographic questionnaire, those related to between group differences, and those related to within group differences. Results of a contingency table analysis indicated that there were no statistically significant differences between the experimental and control groups on the descriptor

information. The non-statistically significant finding for the demographic questions allows for analysis without the need for controlling for additional covariates.

No statistically significant main effect for group membership were observed for the within group comparisons. However, a statistically significant finding for the pre- vs. post writing intervention responses to the PILL resulted. The control group had statistically significantly lower scores on the PILL post writing intervention. This finding suggests that the act of engaging in the intervention may have reduced physical symptoms for the control group.

A MANCOVA was calculated in order to determine if there were any differences between the experimental and the control group on the measures. Follow-up univariate ANOVAs were calculated where appropriate. The between groups analysis was designed to answer the research question that was the primary purpose of this study. Results of Box's M and Levene's test indicated that there were no statistically significant violations of the assumptions necessary to interpret the statistical results of the MANCOVA. The multivariate tests indicated two main effects for covariates but no main effect for group membership. However, follow-up of pairwise comparisons indicated a statistically significant difference in the reported post-test scores on the PILL between the experimental and control groups. Additionally, the main effect for the Pretest and post-test responses on the dependent measures indicated that a change in responses did occur following the writing intervention most notably on the MAACL-R Depression subscale.

Discussion

There have been many studies conducted using expressive writing interventions where participants have reported statistically significant improvements in their physical

well-being (Pennebaker, 1997; Pennebaker & Beall, 1986; Esterling, Antoni, Fletcher, Marguiles, & Schneiderman, 1994; Greenberg & Stone, 1992; Pennebaker, Colder, & Sharp, 1990). Results of the current study add to the literature as analyses indicated a statistically significant reduction in reported physical symptoms as evidenced by a decrease in scores on the PILL for the control group following the writing intervention. Participants in the control group apparently achieved a reduction in their physical symptoms of stress from the experience of writing in response to the prompts they received. However, a similar result was not achieved for the group who responded to a value-laden topic. Possibilities for the discrepancy between the results related to the different writing prompts will be discussed under *Possible Contributors to Non-Statistically significant Findings*.

Evidence taken from the literature also shows that participants can achieve improved psychological states including reduced anxiety with the use of expressive writing intervention (Slone & Marx, 2004; Batten, Follette, Hall, & Palm 2002). Unfortunately, results of the current study did not extend the findings on expressive writing as a means of reducing anxiety. Participants also did not report a change in feelings of hostility as a result of their participation in the writing intervention. However, results of the current study add to the literature as analyses indicated a statistically significant difference in scores obtained prior to the writing intervention and scores obtained following the writing intervention on the Depression Scale of the MAACL-R. Participants in both groups apparently received a psychological benefit as they reported a reduction in depression scores from the experience of writing in response to the prompts they received.

Taken together, results of the current study add to the existing literature that short-term expressive writing can result in a reduction in the physical symptoms of stress as well as a reported improvement in psychological state as evidenced by the decrease in scores on the PILL for the control group, and the Depression Scale of the MAACL-R.

Benefits of Religiosity

Reported outcomes for several studies indicate that higher levels of religiosity serve as a predictor of improved ethical choices, as well as decreased levels of defensiveness, anxiety, and stress (Storch, Storch, Kovacs, Okun, & Welsh, 2003; Storch & Storch, 2001; Steffen & Fearing, 2007; Roff, Butkeviciene, & Klemmack, 2002; Dedert, Studts, Weissbecker, Salmon, Banis, & Sephton, 2004; Ironson, Balban, O'Cleirigh, Kumar, Larson, & Woods, 2001). One of the underlying purposes of this study was to investigate whether participants with high levels of religiosity could benefit from engaging in a short-term expressive writing intervention. It was posited that the necessarily high level of religiosity needed to be an Orthodox Jewish wife would have a potentially unique influence on the data. Results from the current study extend the existing literature on the role of religiosity and mental health. Results indicated that the participants who reported lower levels of religiosity also obtained higher scores on the pre-writing measure of depression. Interestingly, there was no relationship between the religiosity scores and the post-writing measures. This result suggests that whatever relation religiosity and depression scores had prior to the writing did not exist following the writing.

Possible Contributors to Non-Statistically significant Findings

The most logical explanation of the non-statistically significant findings in the comparisons of the experimental and control groups is that the questions used for the writing prompts did not elicit the desired effects for the different groups. There are several possibilities of where the breakdown occurred, 1) the experimental group received the same prompt for all three days, 2) focusing the experimental groups efforts on religious observance did not result in a lessening of psychological or physical symptoms, and 3) the prompt questions the control group received were not neutral. Each possibility will be discussed in greater detail.

Same prompt for three days

Participants assigned to the experimental group were asked to, “What do you find gratifying about preparing for a religious observance and do you feel it adds to your enlightenment?” The underlying principal for using this prompt was to focus the participants writing on the purposes for ritual and religious observance. By continuing with the prompt for all of the writings, it was hoped that the participants would go beyond the surface answers and engage in an honest dialogue about the deeper religious significance of the religious observance. Focusing on the deeper meaning was hoped to tap into the benefits of high levels of religiosity (VandeCreek, Janus, Pennebaker, & Binau, 2002).

Another possible limitation of writing on the same prompt for three consecutive days may have been that the participants became bored with the topic. Participants in the experimental group actually had higher scores on the Hostility Scale of the MAACL-R post-writing intervention. Although the difference in scores was not statistically

significant, it may suggest that participants in the experimental group actually became more irritated over the course of their participation. It makes sense that increased hostility would not foster statistically significant decreases on any of the other measures. An additional possibility may be related to the question for the experimental group focusing on the religious observances.

Focus on religious observance

The experimental group was prompted to focus on how the preparation for the observances contributed to their enlightenment. The prompt attempted to focus the experimental group's writing on the positive purposes of the preparations. However, the prompt may have not been sufficiently positive to foster any improved sense of well-being for the participants. Additionally, it is possible that by focusing on the religious observances, writing may have been centered around the potential source of their stress. By asking the participants to write about how the preparations contribute to deeper religious observance, the prompt may not have allowed for either enough latitude to truly address religious observance as a source of stress. Previous studies indicate that individuals who fully engage in the writing process and embrace the letting-go experience receive the greatest health benefit (Pennebaker, 1997a; Pennebaker, Colder, & Sharp, 1990). The writing prompt may have been too ambiguous to inspire deeper introspection. Another potential confound could be that the prompt did not encourage participants to truly process a source of stress. Another possibility for the lack of between group findings could be due to the nature of the prompts provided to the control group.

Not neutral prompts

Every effort was made to construct writing prompts for the control group that did not elicit a great deal of emotion and had no bearing on religious observance. In an attempt to fulfill those parameters, participants assigned to the control group were asked to respond to, “What things do you do with your family for entertainment?”, “In what ways does your family work together?”, and “Describe the location where you are currently writing”. It is possible that the participants benefited from the opportunity to not contemplate the role of religion in their lives and instead were asked to focus on topics that are tangential to religious observance. Burton and King (2004) conducted research that explored the health benefits of expressive writing, specifically expressive writing about positive experiences, and its relation to general health benefits. The results of the study showed enhanced positive moods and fewer health center visits due to illness for the group that wrote about positive experiences as compared to the group that wrote about neutral topics. Asking the participants to focus on the positive aspects of family life such as being together for fun events and working together to accomplish goals, may have been sufficiently positive enough writings to foster an increased sense of well-being for the participants. Discussion of the weaknesses in the design of the writing prompts leads to areas to direct future research.

Future Research Directions

There are areas of weakness that are apparent with the current study that would benefit from being changed in future studies of this topic. Some potential methodological changes include, 1) modifying the writing prompts, 2) collecting the writing samples, 3)

widen and increase the population for sampling, and 4) including a non-writing group. A more detailed description of these changes follows.

Modified writing prompts

As discussed previously, it is possible that the writing prompts used were not able to facilitate the desired effects for either the experimental or control group. Potential ways to address the problem in future research would be to either pilot the prompts prior to use for investigation or have participants rate the prompts following the writing. If prompts were piloted on a representative sample of participants, the experimenter could ascertain what type of emotional response the prompts elicited. Based on the writing done by the participants a given prompt could be rated as inducing negative emotions, positive emotions, or neutral feedback. It is possible that if the sampling for prompts were done in a planned and systematic way that the data collected would allow for the creation of a databank for writing prompts to use in subsequent experimental research. Another possibility would be to have participants rate the prompts following the completion of the daily writing.

Participants could be asked to rate a particular prompt following their writing on parameters such as, “To what degree did your writing focus on negative thoughts and feelings?”, or “To what degree did your writing focus on positive thoughts and feelings?”. Participants could rate the intensity of feeling using a Likert scale. The information obtained from the rating would be instructive for the purposes of constructing better prompts for future studies. Additionally, the information could potentially be used as a covariate during analysis in an attempt to control for varying degrees of responses by individual participants. Vital information necessary to gauge the

reliability of the prompts in eliciting emotional response could also be obtained from the writing sample itself.

Collecting Writing Samples

A distinct area of weakness in the current study was not requiring participants to submit their writing. Speculation regarding possible reasons for the non-statistically significant findings between groups should also include the fact that individual writing samples were not collected. Participants were not asked to submit their writing samples in an attempt to ensure that each person would have full confidence in the anonymity of her participation. The population of participants the current study sought is an intensely private group. It was felt that requiring writing samples to be submitted would have drastically reduced the number of women who would have participated. Since the population to draw a research sample from is small to begin with, it was determined that procedures that would potentially limit participation would have been catastrophic to data collection.

Unfortunately, by not requiring submission of the samples, it is unknown whether the participants actually engaged in the writing. It also did not allow for analysis of the writing itself to determine the extent to which the participants used emotional language. Data from the samples themselves would have assisted in assessing the reliability of the prompts to elicit the targeted emotions. In all research, the experimenter must balance all of the factors in order to ensure participation and reliability of data collection. Potential ways to have ensured a larger number of participants could have been to recruit both strictly observant and less observant participants as well as offering both a paper and internet version to participants.

Widen the Population

Future research should seek to expand the population of individuals to be included in a research sample. A potential way to ensure an adequate number of participants for research purposes would be to expand the inclusion parameters to include women who identify themselves as practicing tenets associated with the Conservative Jewish movement. Many people associated with Conservative Judaism maintain a high level of religious observance. Information obtained on the DUREL would provide information as to whether it was even necessary to separate participants into groups based on religious affiliation. A much larger number of American Jewish people would describe themselves as members of the Conservative movement. By expanding inclusion criteria to include Conservative Jewish wives, a much larger pool of participants would be available. Participation was also limited by the use internet only data collection.

Another possible way to expand the population available to draw a sample from would be to provide a paper version of the directions and measures to individuals. Some members of the Orthodox Jewish community choose not to have internet access. Other individuals simply feel more comfortable using a paper interface than a computer interface. Paper versions could be picked up from a convenient location and returned to either the same location or a different one. Anonymity could still be ensured by having a drop-off point where participants could leave their data without the investigator knowing who provided the information. Widening the population through the inclusion of members of the Conservative movement and providing a paper option for participation would improve the external validity of the study. Using a larger population would also

provide the opportunity to strengthen the research design by adding an additional grouping variable.

A Non-Writing Group

Repeated measures designs are improved by adding a control group whenever possible. For the short-term expressive writing paradigm, the control group would constitute a group that does not participate in any type of writing. This non-writing group would complete all of the pre-writing measures the same as the experimental and control groups. The difference would be that participants assigned to the non-writing group would not receive a writing prompt. They would be told to return in the prescribed amount of time to complete the post-measures. Adding a non-writing group would strengthen the reliability of the design. The non-writing group data could be used as a covariate to help control for a placebo effect of engaging in writing. It would also help level any effects resulting from problems with the writing prompts.

Summary

This study was a repeated measures experimental study of the use of short-term expressive writing with a group of Orthodox Jewish wives. The purpose of this study was to investigate the use of Pennebaker's short-term expressive writing intervention (1996) for the reduction of anxiety and the physical symptoms associated with stress with participants who are Orthodox Jewish wives preparing for a religious observance. Prior to participants responding to a writing prompt, demographic data including scores on the DUREL, was obtained. Additionally, prior to writing, data were collected on the variables associated with psychological state and physical symptoms of stress. Following the three days of writing, data were collected on the variables associated with

psychological state and physical symptoms of stress. The results of this study extend the literature available on the use of short-term expressive writing as a therapeutic intervention to reduce feelings of depression as well as reduce physical symptoms associated with stress. Results of the study also extend the literature on the health benefits that seem to be an intrinsic part of having a high degree of religiosity. The combined contribution of the results of this study indicates that short-term expressive writing provides benefits to individuals who are deeply religious.

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APPENDICES

APPENDIX A

DUREL: Duke Religion Index

To: DAVID J RICHEL'S <drich001@odu.edu>
 From: "Harold G. Koenig" <koenig@geri.duke.edu>
 Date: 07/11/2008 12:33PM

Subject: Re: Duke Religion Index - DUREL

David -- yes, you have permission. I'm attaching the scale and the studies on psychometric properties. HK

At 11:19 AM 7/11/2008, you wrote:

Dr. Koenig,

My name is David Richels and I am a doctoral candidate at Old Dominion University. One of my cohort, Brenda Smith, who I believe has been in contact with you, introduced me to the DRI/DUREL. I as part of my study I need to measure religiousity of the participants, to see how it may or may not be related to a handful of other factors. I don't wish to bore you with the detail, but I will be more than happy to explain my study to you if you have the interest.

Would it be possible to get permission from you to use the DRI/DUREL for this purpose?

Thank you very much for your time.

Sincerely,
 David Richels
 Harold G. Koenig, M.D.
 Professor of Psychiatry & Behavioral Sciences
 Associate Professor of Medicine
 Box 3400 Duke University Medical Center
 Durham, NC 27710
 919-681-6633 (voice mail)
 1-888-244-5517 (FAX)
 919-383-6962 (P) (private line to his desk)
 FEDEX address: 415 Clarion Dr., Durham, NC 27705

To stay updated on religion, spirituality and health -- go to
www.dukespiritualityandhealth.org

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DUREL: Duke University Religion Index

Directions: Please answer the following questions about your religious beliefs and/or involvement. Please indicate your answer with a checkmark.

(1) How often do you attend church or other religious meetings?

1. More than once/wk
2. Once a week
3. A few times a month
4. A few time a year
5. Once a year or less
6. Never

(2) How often do you spend time in private religious activities, such as prayer, meditation or Bible study?

1. More than once a day
2. Daily
3. Two or more times/week
4. Once a week
5. A few times a month
6. Rarely or never

The following section contains 3 statements about religious belief or experience. Please mark the extent to which each statement is true or not true for you.

(3) In my life, I experience the presence of the Divine (i.e., God).

1. Definitely true of me
2. Tends to be true
3. Unsure
4. Tends *not* to be true
5. Definitely *not* true

(4) My religious beliefs are what really lie behind my whole approach to life.

1. Definitely true of me
2. Tends to be true
3. Unsure
4. Tends *not* to be true
5. Definitely *not* true

(5) I try hard to carry my religion over into all other dealings in life.

1. Definitely true of me
2. Tends to be true
3. Unsure
4. Tends *not* to be true
5. Definitely *not* true

APPENDIX B

The PILL: The Pennebaker Inventory of Limbic Languidness

The Pennebaker Inventory of Limbic Languidness

Page 1 of 1

Please only click the "Done" one time, it may take up to 15 seconds for the next page to load.

Completing this Psychological Screening Test

The questionnaire includes a list of 54 common physical symptoms and sensations. Please select from the popup menu next to each, how frequently you have experienced that symptom or sensation.

Take the Quiz

Please note: This test will only be scored correctly if you answer each one of the questions.

1. Eyes water
 - ☐ Have never or almost never experienced
 - ☐ Less than 3 or 4 times per year
 - ☐ Every month or so
 - ☐ Every week or so
 - ☐ More than once every week
2. Itchy eyes or skin
 - ☐ Have never or almost never experienced
 - ☐ Less than 3 or 4 times per year
 - ☐ Every month or so
 - ☐ Every week or so
 - ☐ More than once every week
3. Ringing in ears
 - ☐ Have never or almost never experienced
 - ☐ Less than 3 or 4 times per year
 - ☐ Every month or so
 - ☐ Every week or so
 - ☐ More than once every week
4. Temporary deafness or hard of hearing
 - ☐ Have never or almost never experienced
 - ☐ Less than 3 or 4 times per year
 - ☐ Every month or so
 - ☐ Every week or so
 - ☐ More than once every week

The Penn State Inventory of Allergic Lung Disease Survey

5. Lump in throat

- ☐ Have never or almost never experienced
- ☐ Less than 3 or 4 times per year
- ☐ Every month or so
- ☐ Every week or so
- ☐ More than once every week

6. Choking sensations

- ☐ Have never or almost never experienced
- ☐ Less than 3 or 4 times per year
- ☐ Every month or so
- ☐ Every week or so
- ☐ More than once every week

7. Sneezing spells

- ☐ Have never or almost never experienced
- ☐ Less than 3 or 4 times per year
- ☐ Every month or so
- ☐ Every week or so
- ☐ More than once every week

8. Runny nose

- ☐ Have never or almost never experienced
- ☐ Less than 3 or 4 times per year
- ☐ Every month or so
- ☐ Every week or so
- ☐ More than once every week

9. Congested nose

- ☐ Have never or almost never experienced
- ☐ Less than 3 or 4 times per year
- ☐ Every month or so
- ☐ Every week or so
- ☐ More than once every week

10. Bleeding nose

- ☐ Have never or almost never experienced
- ☐ Less than 3 or 4 times per year
- ☐ Every month or so
- ☐ Every week or so
- ☐ More than once every week

11. Asthma or wheezing

- ☐ Have never or almost never experienced
- ☐ Less than 3 or 4 times per year
- ☐ Every month or so
- ☐ Every week or so
- ☐ More than once every week

12. Coughing

- ☐ Have never or almost never experienced
- ☐ Less than 3 or 4 times per year
- ☐ Every month or so
- ☐ Every week or so
- ☐ More than once every week

13. Out of breath

- ☐ Have never or almost never experienced
- ☐ Less than 3 or 4 times per year
- ☐ Every month or so
- ☐ Every week or so
- ☐ More than once every week

14. Swollen ankles

- ☐ Have never or almost never experienced
- ☐ Less than 3 or 4 times per year
- ☐ Every month or so
- ☐ Every week or so
- ☐ More than once every week

The Penn State Inventory of Limbic Longitudes Survey

15. Chest pains

- ☐ Have never or almost never experienced
- ☐ Less than 3 or 4 times per year
- ☐ Every month or so
- ☐ Every week or so
- ☐ More than once every week

16. Racing heart

- ☐ Have never or almost never experienced
- ☐ Less than 3 or 4 times per year
- ☐ Every month or so
- ☐ Every week or so
- ☐ More than once every week

17. Cold hands or feet even in hot weather

- ☐ Have never or almost never experienced
- ☐ Less than 3 or 4 times per year
- ☐ Every month or so
- ☐ Every week or so
- ☐ More than once every week

18. Leg cramps

- ☐ Have never or almost never experienced
- ☐ Less than 3 or 4 times per year
- ☐ Every month or so
- ☐ Every week or so
- ☐ More than once every week

19. Insomnia or difficulty sleeping

- ☐ Have never or almost never experienced
- ☐ Less than 3 or 4 times per year
- ☐ Every month or so
- ☐ Every week or so
- ☐ More than once every week

20. Toothaches

- ☐ Have never or almost never experienced
- ☐ Less than 3 or 4 times per year
- ☐ Every month or so
- ☐ Every week or so
- ☐ More than once every week

21. Upset stomach

- ☐ Have never or almost never experienced
- ☐ Less than 3 or 4 times per year
- ☐ Every month or so
- ☐ Every week or so
- ☐ More than once every week

22. Indigestion

- ☐ Have never or almost never experienced
- ☐ Less than 3 or 4 times per year
- ☐ Every month or so
- ☐ Every week or so
- ☐ More than once every week

23. Heartburn or gas

- ☐ Have never or almost never experienced
- ☐ Less than 3 or 4 times per year
- ☐ Every month or so
- ☐ Every week or so
- ☐ More than once every week

24. Abdominal pain

- ☐ Have never or almost never experienced
- ☐ Less than 3 or 4 times per year
- ☐ Every month or so
- ☐ Every week or so
- ☐ More than once every week

25. Diarrhea

- ☐ Have never or almost never experienced
- ☐ Less than 3 or 4 times per year
- ☐ Every month or so
- ☐ Every week or so
- ☐ More than once every week

26. Constipation

- ☐ Have never or almost never experienced
- ☐ Less than 3 or 4 times per year
- ☐ Every month or so
- ☐ Every week or so
- ☐ More than once every week

27. Hemorrhoids

- ☐ Have never or almost never experienced
- ☐ Less than 3 or 4 times per year
- ☐ Every month or so
- ☐ Every week or so
- ☐ More than once every week

28. Swollen joints

- ☐ Have never or almost never experienced
- ☐ Less than 3 or 4 times per year
- ☐ Every month or so
- ☐ Every week or so
- ☐ More than once every week

29. Stiff or sore muscles

- ☐ Have never or almost never experienced
- ☐ Less than 3 or 4 times per year
- ☐ Every month or so
- ☐ Every week or so
- ☐ More than once every week

The Penn State Inventory of Lifetime Longitudinal Survey

30. Back pains

- ☐ Have never or almost never experienced
- ☐ Less than 3 or 4 times per year
- ☐ Every month or so
- ☐ Every week or so
- ☐ More than once every week

31. Sensitive or tender skin

- ☐ Have never or almost never experienced
- ☐ Less than 3 or 4 times per year
- ☐ Every month or so
- ☐ Every week or so
- ☐ More than once every week

32. Face flushes

- ☐ Have never or almost never experienced
- ☐ Less than 3 or 4 times per year
- ☐ Every month or so
- ☐ Every week or so
- ☐ More than once every week

33. Tightness in chest

- ☐ Have never or almost never experienced
- ☐ Less than 3 or 4 times per year
- ☐ Every month or so
- ☐ Every week or so
- ☐ More than once every week

34. Skin breaks out in rash

- ☐ Have never or almost never experienced
- ☐ Less than 3 or 4 times per year
- ☐ Every month or so
- ☐ Every week or so
- ☐ More than once every week

35. Acne or pimples on face

- ☐ Have never or almost never experienced
- ☐ Less than 3 or 4 times per year
- ☐ Every month or so
- ☐ Every week or so
- ☐ More than once every week

36. Acne/pimples other than face

- ☐ Have never or almost never experienced
- ☐ Less than 3 or 4 times per year
- ☐ Every month or so
- ☐ Every week or so
- ☐ More than once every week

37. Bolls

- ☐ Have never or almost never experienced
- ☐ Less than 3 or 4 times per year
- ☐ Every month or so
- ☐ Every week or so
- ☐ More than once every week

38. Sweat even in cold weather

- ☐ Have never or almost never experienced
- ☐ Less than 3 or 4 times per year
- ☐ Every month or so
- ☐ Every week or so
- ☐ More than once every week

39. Strong reactions to insect bites

- ☐ Have never or almost never experienced
- ☐ Less than 3 or 4 times per year
- ☐ Every month or so
- ☐ Every week or so
- ☐ More than once every week

40. Headaches

- ☐ Have never or almost never experienced
- ☐ Less than 3 or 4 times per year
- ☐ Every month or so
- ☐ Every week or so
- ☐ More than once every week

41. Feeling pressure in head

- ☐ Have never or almost never experienced
- ☐ Less than 3 or 4 times per year
- ☐ Every month or so
- ☐ Every week or so
- ☐ More than once every week

42. Hot flashes

- ☐ Have never or almost never experienced
- ☐ Less than 3 or 4 times per year
- ☐ Every month or so
- ☐ Every week or so
- ☐ More than once every week

43. Chills

- ☐ Have never or almost never experienced
- ☐ Less than 3 or 4 times per year
- ☐ Every month or so
- ☐ Every week or so
- ☐ More than once every week

44. Dizziness

- ☐ Have never or almost never experienced
- ☐ Less than 3 or 4 times per year
- ☐ Every month or so
- ☐ Every week or so
- ☐ More than once every week

45. Feel faint

- ☐ Have never or almost never experienced
- ☐ Less than 3 or 4 times per year
- ☐ Every month or so
- ☐ Every week or so
- ☐ More than once every week

46. Numbness or tingling in any part of body

- ☐ Have never or almost never experienced
- ☐ Less than 3 or 4 times per year
- ☐ Every month or so
- ☐ Every week or so
- ☐ More than once every week

47. Twitching of eyelid

- ☐ Have never or almost never experienced
- ☐ Less than 3 or 4 times per year
- ☐ Every month or so
- ☐ Every week or so
- ☐ More than once every week

48. Twitching other than eyelid

- ☐ Have never or almost never experienced
- ☐ Less than 3 or 4 times per year
- ☐ Every month or so
- ☐ Every week or so
- ☐ More than once every week

49. Hands tremble or shake

- ☐ Have never or almost never experienced
- ☐ Less than 3 or 4 times per year
- ☐ Every month or so
- ☐ Every week or so
- ☐ More than once every week

The Painschaker Inventory of Limbic Longitudinal Survey

50. Stiff joints

- ☐ Have never or almost never experienced
- ☐ Less than 3 or 4 times per year
- ☐ Every month or so
- ☐ Every week or so
- ☐ More than once every week

51. Sore muscles

- ☐ Have never or almost never experienced
- ☐ Less than 3 or 4 times per year
- ☐ Every month or so
- ☐ Every week or so
- ☐ More than once every week

52. Sore throat

- ☐ Have never or almost never experienced
- ☐ Less than 3 or 4 times per year
- ☐ Every month or so
- ☐ Every week or so
- ☐ More than once every week

53. Sunburn

- ☐ Have never or almost never experienced
- ☐ Less than 3 or 4 times per year
- ☐ Every month or so
- ☐ Every week or so
- ☐ More than once every week

54. Nausea

- ☐ Have never or almost never experienced
- ☐ Less than 3 or 4 times per year
- ☐ Every month or so
- ☐ Every week or so
- ☐ More than once every week

Done

APPENDIX C
Informed Consent

שלום

בס"ד

I NEED YOUR HELP!

My name is David Richels, and I am a doctoral candidate, at Old Dominion University, in Norfolk, VA. I am also a member of B'Nai Israel Congregation, an Orthodox Synagogue in Norfolk, Virginia. For my dissertation research, I will be conducting a study of expressive writing as a way to promote wellness in preparation for the religious observances. I need Orthodox Jewish wives to complete 3 short surveys and do some writing. Your writings will not be collected, and therefore you may do with them as you wish. Please feel free to retain or destroy the writings at your discretion. You are advised to destroy your writings if there is a possibility at your site that your writings can be read by someone not connected with the study. As with any writings of a personal nature you may want to take precautions to keep your writings private. Your writings are not part of the data collection. Participation is done through the use of the internet. Participants will complete the surveys anonymously.

The study is now open, and your participation is needed once each calendar day for 3 consecutive days. If you decide to participate, then you will join a study that involves guided writing for 15 minutes each day for three (3) consecutive days, as well as completing short surveys daily.

Participation in this study will last for three days for writing and other data collection. Approximately 75 – 100 people will be participating in this study. As you can see, the time you will actually spend on the internet completing the surveys is very limited.

All information will be anonymous and confidential!

No risks are identified with this research, but as with any research, there is some possibility that you may be subject to risks that have not yet been identified.

The main benefit to you for participating in this study is the possibility of an increased sense of wellness.

All information obtained about you in this study is strictly anonymous and therefore confidential. The results of this study may be used in reports, presentations, and publications.

Participation in this study is voluntary, and participants may discontinue participation in the study at any time. It is OK for you to stop participating in the study. Even if you begin the study now, you are free to stop participating later, and walk away or withdraw from the study -- at any time. Your decision will not affect your relationship with Old Dominion University, or otherwise cause a loss of benefits to which you might otherwise be entitled. Due to the voluntary and anonymous nature of the study, no payment of any kind for participation will be made.

Data from this study will be aggregated and reported as such. No individual submissions will be identified or discussed as part of any aspect of this research.

The study will run in its entirety through November, 2009.

The information you supply can help improve the understanding between the connections of religion, writing, and wellness. Additionally, the study is important to me on a personal level. As a fellow Orthodox Jew, I am vested through my work toward making the Jewish community a better place to live. -- **תקון עולם**

I cannot do it without your help.

כל ישראל ערבים זה לזה

(Shevuot 39a)

If you have any questions or concerns please contact me at, **david@richels.com**

APPENDIX D
Demographic Survey

Demographic Questionnaire:

1) What is your age?

- ☐ 25 and younger
☐ 26 – 40
☐ 41 – 55
☐ 56 and older

2) Check all that apply to you:

- ☐ married ☐ have been divorced ☐ have been widowed

3) What types of school(s) did you attend from kindergarten until receiving your high school diploma or equivalent:

- ☐ Home School
☐ Private School (religious)
☐ Private School (secular)
☐ Public School
☐ Other (if other please specify: _____)

4) Highest degree earned?

- ☐ High School Diploma or Equivalent
☐ Bachelor's Degree
☐ Master's Degree
☐ Doctorate
☐ Other (if other please specify: _____)

5) Ethnic group designation:

6) What is the primary language spoken in your household?

7) What country do you currently reside?

8) How many people are you preparing for the holiday for?

- | | | | |
|----------------------------|----------------------------|----------------------------|-------------------------------------|
| <input type="checkbox"/> 1 | <input type="checkbox"/> 4 | <input type="checkbox"/> 7 | <input type="checkbox"/> 10 or more |
| <input type="checkbox"/> 2 | <input type="checkbox"/> 5 | <input type="checkbox"/> 8 | |
| <input type="checkbox"/> 3 | <input type="checkbox"/> 6 | <input type="checkbox"/> 9 | |

9) Were you raised in an observant household?

☐ Yes

☐ No

10) How many females are in your household above the age of 12 for the holiday?

☐ 1

☐ 4

☐ 7

☐ 10 or more

☐ 2

☐ 5

☐ 8

☐ 3

☐ 6

☐ 9

APPENDIX E

Institutional Review Board Approval Letter

No.: 08-090

OLD DOMINION UNIVERSITY
HUMAN SUBJECTS INSTITUTIONAL REVIEW BOARD
RESEARCH PROPOSAL REVIEW NOTIFICATION FORM

TO: Nina Brown
Responsible Project Investigator

DATE: October 15, 2008
IRB Decision Date

RE: An Exploration of the Use of Expressive Writing to Reduce Physical and
emotional Symptoms Associated with Stress in a Sample of Orthodox Jewish
Wives Preparing for a Religious Observance
Name of Project

Please be informed that your research protocol has received approval by the Institutional Review Board. Your research protocol is:

- ☒ Approved (as exempt)
☐ Tabled/Disapproved
☐ Approved contingent on making the changes below*

George C. Maikhaler October 15, 2008
IRB Chairperson's Signature date

Contact the IRB for clarification of the terms of your research, or if you wish to make ANY change to your research protocol.

The approval expires one year from the IRB decision date. You must submit a Progress Report and seek re-approval if you wish to continue data collection or analysis beyond that date, or a Close-out report. You must report adverse events experienced by subjects to the IRB chair in a timely manner (see university policy).

- * Approval of your research is CONTINGENT upon the satisfactory completion of the following changes and attestation to those changes by the chairperson of the Institutional Review Board. Research may not begin until after this attestation.

Attestation

As directed by the Institutional Review Board, the Responsible Project Investigator made the above changes. Research may begin.

George C. Maikhaler November 17, 2008

VITA

David J. Richels

EDUCATION

- | | |
|------|---|
| 2001 | M.S., Marriage and Family Therapy
University of Maryland, College Park, MD |
| 1994 | B.S., Psychology
Old Dominion University, Norfolk, VA |

Licensure

- | | |
|--------------|--|
| 2003-present | Virginia Licensure, Special Education, MR/LD
“Highly Qualified” Special Education Teacher in all disciplines K-12 |
|--------------|--|

PROFESSIONAL EXPERIENCE

- | | |
|--------------|--|
| 2004-present | Special Education Teacher, Chesapeake City Public Schools, Chesapeake, VA. Provided academic support in resource and inclusion settings for high school students with a variety of special education categories. |
| 1991-present | Varsity Soccer Coach, Bayside High School, Nansemond Suffolk Academy, Booker T. Washington High School, and Hickory High School. Provided sport specific skills instruction as well as aided in character development, and academic guidance |
| 2002-2004 | Adjunct Instructor, Old Dominion University. Involved in teaching undergraduate level courses including Family Guidance, and Undergraduate Internships. Formats included main campus, teletechnet, and asynchronous Blackboard instruction. |
| 2001 | Group Therapist, Sentara Virginia Beach General Hospital. Facilitated group therapy for patients recovering from cardiac surgery. |
| 1999-2001 | Marriage and Family Therapist, University of Maryland Family Service Center. Involved in providing clinical service delivery, and research activity with clients requiring therapeutic evaluation and intervention. |

UNIVERSITY TEACHING EXPERIENCE

- Summer, 2004 COUN 468 "Internship in Human Services Counseling" Old Dominion University.
- Spring, 2004 COUN 468 "Internship in Human Services Counseling" (Teletechnet) Old Dominion University.
- Spring, 2004 COUN 468 "Internship in Human Services Counseling" (Blackboard) Old Dominion University.
- Fall, 2003 COUN 468 "Internship in Human Services Counseling" Old Dominion University.
- Fall, 2003 COUN 491 "Family Guidance" Old Dominion University.
- Fall, 2003 COUN 491 "Family Guidance" Old Dominion University.
- Fall, 2003 COUN 846 "Practicum: Counseling Supervision" Old Dominion University
- Summer, 2003 COUN 491 "Family Guidance" Old Dominion University.
- Spring, 2003 COUN 468 "Internship in Human Services Counseling" Old Dominion University.
- Spring, 2003 COUN 491 "Family Guidance" Old Dominion University.
- Fall, 2002 COUN 491 "Family Guidance" Old Dominion University.
- Fall, 2002 COUN 491 "Family Guidance" Old Dominion University.
- Fall, 2002 COUN 491 "Family Guidance" Old Dominion University.