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The Relationship Between Religious Orientation,
Age, and Eating Disorder Symptoms

Sara Slagle Susov

A thesis submitted to the faculty of
Brigham Young University
in partial fulfillment of the requirements for the degree of
Educational Specialist in School Psychology

P. Scott Richards, Chair
Lane Fischer
Dianne Nielsen

Department of Counseling Psychology and Special Education

Brigham Young University

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ABSTRACT

The Relationship Between Religious Orientation, Age, and Eating Disorder Symptoms

Sara Slagle Susov

Department of Counseling Psychology and Special Education, BYU
Educational Specialist in School Psychology

Eating disorders are public health problems that are becoming increasingly prevalent in the United States. Research has shown that the etiology of eating disorders is multifaceted, and includes physical, socioemotional, and generic risk factors. One area that predicts eating disorder behaviors is religious orientation; however, the literature on the relationship between eating disorder symptomology and religious orientation has been mixed.

Religious orientation is defined as reason for engaging in religious practice. People who have an intrinsic religious orientation live their religion instead of using their religion, and people with an extrinsic religious orientation use their religion to help them achieve their goals instead of living their religion.

To help fill this deficit, this study looked at the relationship between religious orientation (extrinsic vs. intrinsic), age, and eating disorder symptomology. Participants for this study included 213 adult women of the Church of Jesus Christ of Latter-day Saints attending a large western university. This study found a positive correlation between bulimic symptomology and an extrinsic religious orientation. No correlation was shown for age or intrinsic religious orientation, and age did not mediate eating disorder symptomology. No correlation was shown for oral control or dieting among participants.

These findings can be used to inform therapists of the relationship between bulimic symptomology and an extrinsic religious orientation, and may inform interventions chosen in treatment for individuals with bulimia nervosa, particularly among Latter-day Saint women.

Keywords: eating disorder symptomology, religious orientation, age

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DESCRIPTION OF STRUCTURE AND CONTENT

Following the introductory pages (title page, acknowledgements, abstract, table of contents and list of tables), this thesis is segmented into two major sections: (a) the article ready for submission to a journal (pp. 1-19) and (b) the review of the literature (pp. 20-62).

This thesis contains two reference lists. The first reference list (p. 45) contains the references included in the journal ready article. The second reference list (p. 57) includes all citations used in both the journal ready article and the section titled “Appendix A: Literature Review” (p. 20).

Introduction

Eating disorders (EDs) have become increasingly prevalent in the United States in the last thirty years. Approximately eleven million people in the United States currently suffer from eating disorders. Roughly ninety percent of those with eating disorders are women, and ten percent are men (American Psychiatric Association, 2000; Weinberger-Litman, 2008). Eating disorders are a problem for those who suffer from them for medical, emotional, and financial reasons, but they are also a public health concern. Eating disorders have a higher mortality rate than any other psychiatric disorder, and treatment costs approximately \$6 billion each year.

The Nature of Eating Disorders

Three categories of eating disorders are specified by the *Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition, Text Revision (DSM-IV-TR, [2000])*: Anorexia nervosa, bulimia nervosa, and eating disorders not otherwise specified (EDNOS). Anorexia nervosa is characterized by a refusal to maintain normal body weight, an intense fear of gaining weight, a distorted perception of body size and shape, and a loss of menstruation in post-menarcheal females (absences of three or more consecutive menstrual cycles).

Bulimia nervosa is categorized by binge eating, purging, and having a negative self-evaluation influenced by body shape and weight (DSM-IV-TR, 2000). A binge is defined as a discrete amount of time (usually less than two hours) in which an individual eats more than most individuals would eat during a similar period of time. The individual also feels a lack of control over their eating during the binge episode, and will often eat until they are uncomfortably full. Purging can be completed through self-induced vomiting or the misuse of laxatives, diuretics, or enemas. As with anorexia nervosa, the individual's self worth depends on perceived success with their weight loss, and by their weight and shape (Daniels, 2009).

Eating Disorders Not Otherwise Specified are diagnosed when individual do not meet the criteria for either anorexia nervosa or bulimia nervosa. Examples of this may include an individual who binges but does not purge, who purges after a small amount of food is consumed, or who meets all the criteria for anorexia nervosa but whose weight is still considered in the normal range (American Psychological Association, 2000).

Etiology. Research has found that the etiology of eating disorders is multifaceted, including body image concerns, childhood obesity, perfectionism, sexual abuse, gender, and ethnicity (Franko & Striegel-Moore, 2007). One repeated theme in ED literature is that of the person with an ED feeling a lack of control and attempting to gain control through their eating disorder (Bruch, 1973; Varady, 2002).

Eating disorders start to develop between early adolescence and young adulthood, but researchers have not looked at age as a mediating factor for eating disorders. As there is no one cause of eating disorders, researchers are looking at multiple risk factors and the ways those factors are interrelated. Researchers have also started looking at prevention and intervention efforts to stop an eating disorder from becoming acute, but because EDs are so complex, no one specific method of treatment has been found to be effective.

Factors contributing to eating disorder development. While many factors influencing eating disorder symptomology have been identified, others are still under investigation. Body image concerns, feeling a lack of control, childhood obesity, perfectionism, sexual abuse, and gender all contribute to the development of an eating disorder (Bruch, 1973; Franko & Striegel Moore, 2007; Varady 2002). Other factors such as religiosity, religious orientation, age, and genetic predisposition have only recently been considered, but an association between ED

development and these factors has not been established. Establishing the relationships between multiple areas of ED symptomology is important in prevention and treatment of EDs.

Religious orientation. Previous research has found that greater mental health is linked to one's religious orientation (Bergen, Masters, & Richards, 1987; Fabricatore, Handal, Rubio, & Gilner, 2004; Kendler, Liu, Gardner, McCullough, Larson, & Prescott, 2003; Pargament, 2002; Ryan, Rigby, & King, 1993). An intrinsic religious orientation is positively associated with positive mental health. One purpose of this study is to see if religious orientation is linked to eating disorder symptomology. Discovering whether there is a relationship between eating disorders and religious orientation may inform future treatment of eating disorders.

Researchers in the last 40 years have become interested in the role of spirituality and religion in mental health (Allport & Ross, 1967; Hardman, Barrett, & Richards, 2003; Pargament, 2002). One particular area of interest is religious orientation, or people's motivations for engaging in religion. Allport and Ross (1967) theorized that there are four types of religious orientation: intrinsic religiosity, extrinsic religiosity, indiscriminate pro-religiosity, and non-religiosity or non-traditional religiosity. People with an intrinsic religious orientation live their religion and strive for meaning and value in their lives through their religion. People with an extrinsic religious orientation use their religion instead of living their religion, and may attend for social or familial reasons. People who are indiscriminately pro-religious respond positively to any question perceived as religious on the Religious Orientation Scale (ROS), and people who are indiscriminately non-religious or non-traditionally religious respond negatively to the questions perceived to be religious.

Research on the effects of religious orientation on EDs has been sparse and somewhat mixed. Previous researchers have found that an intrinsic religious orientation is associated with

positive mental health while extrinsic religiosity is often associated with mental health problems (Bergin, Masters & Richards, 1987; Fabricatore, Handal, Rubio, & Gilner, 2004; Kendler, Liu, Gardner, McCullough, Larson & Prescott, 2003; Pargament, 2002; Ryan, Rigby, & King, 1993). Also, people who are indiscriminately pro-religious tend to have poorer mental health, depending on the level of religiosity they endorse. The findings of previous research combined with the lack of research on religion and EDs emphasize the need to understand the relationship between religious orientation and EDs. This will be of interest for prevention and treatment purposes for therapists and people who suffer from EDs.

Although research has been completed on religiosity and eating disorders, the literature is inconsistent. Some studies done on religion have focused on religious affiliations such as Methodist, Baptist, or Jewish (Dancyger et al., 2002; Gluck, 2000; Oomen, 2000; Weinberger-Litman, 2008). Others have focused on the role of spirituality, or personal experiences with the sacred or divine, but not religious orientation, or the reason people engage in religious practice, in treating the ED sufferer (Jacobs-Pilipski, Winzelberg, Wilfley, Bryson, & Taylor, 2005; Marsden, Karagianni, & Morgan, 2007).

Literature on EDs and religious orientation is also sparse, and researching this would better help us understand how to treat people with EDs. One study that was completed by Smith, Richards, and Maglio (2003) found a positive relationship between ED symptoms and extrinsic religiousness in college women at a Truman State University (TSU), a small midwestern university, and also women receiving inpatient treatment for eating disorders at the Center for Change. These researchers also found that people who are extrinsically religious or indiscriminately proreligious tended to have more eating disorder symptoms, but intrinsically religious and nontraditionally religious women had fewer symptoms.

Another study looked at the role of religious orientation, spiritual well-being, body image development, and eating disturbances in Jewish women (Weinberger-Litman, 2008). The sample consisted of 301 young adult women from two colleges and one high school in New York City. This study found that participants with a more intrinsically oriented religious orientation had less body dissatisfaction, eating disturbance, and thin ideal internalization than women with extrinsic or indiscriminately pro-religious orientations. There was not a significant difference for women with a non-traditionally religious orientation. Weinberger-Litman also found that intrinsically oriented women had less internalization of the thin ideal, and hypothesized that having an intrinsic orientation may be protective against EDs. In another study that examined religious orientation and eating disorders symptoms, Oomen (2000) found that Latter-day Saint (LDS) women had the highest scores of religious devoutness (intrinsicness) and the lowest EAT-26 scores, but highly intrinsic participants from other religions did not have lower EAT-26 scores.

Age. A recent study done with LDS women attending college suggests that the relationship between religious orientation and eating disorder symptoms may be mediated by age. Winters (2005) used descriptive statistics to estimate the number of LDS women at Brigham Young University with an eating disorder, based on her sample, and estimated that 9-11% of BYU women have elevated eating disorder risk, with their level of risk and eating disorder symptomology decreasing each progressive year of college. The typical rate of eating disorder symptomology in a university is between 14.5-17%.

In addition, one longitudinal study by Heatherton, Mahamedi, Striepe, Field, and Keel (1997) indicates that ED symptoms tend to decrease with age. These researchers studied 715 women and men, and found that women's bulimic attitudes, drive for thinness, and overall ED

symptomology decreased in the years after they left college. This study indicates that age may mediate ED symptomology and risk factors.

In another study, Lock, Le Grange, Forsberg, and Hewell (2006) compared adolescents with EDs to pre-adolescents with EDs to determine treatment effectiveness. One hundred ten participants were given the Eating Disorder Examination (EDE) and scores and symptomology between the groups were compared. Lock et al. (2006) found that pre-adolescents had lower pre- and post-treatment assessment scores than adolescents. They also found that pre-adolescents had similar behavioral and personality traits as their adolescent counterparts. This study suggests that age may be predictive of how entrenched ED symptoms are for different age groups, and that younger people may have less ED symptomology.

These studies show the need for further research to be done that seeks to further clarify the relationship between eating disorder symptomology and religious orientation, and whether this relationship is moderated by other variables such as age. The findings are not always consistent in this area, so more research could help us understand if there is a relationship between eating disorders and religious orientation, and whether age is associated with eating disorder symptoms or religious orientation.

Statement of Problem

Although several research studies have investigated the relationship between eating disorders and religious orientation in females attending college, the findings have been inconsistent. In addition, there is not much research that has investigated the relationship between age and eating disorder symptomology. There is a need to further investigate these relationships using large samples and standardized measures where age is taken into account.

Statement of Purpose

The purpose of this study is to investigate, using standardized measures, whether there is a relationship between religious orientation and eating disorder symptoms in a larger sample of college-age women. Specifically, this study will investigate whether there is a relationship between religiousness and eating disorder symptomology when age of research participants is included in the analyses.

Research Questions

1. Do intrinsicness, extrinsicness, and age in the presence of each other significantly predict eating disorder symptoms as measured by the total EAT score?
2. In the presence of each other, which of these variables, if any, are predictive of bulimia, dieting, and oral control as measured by the subscales of the EAT?

Method

In 2009, a research team headed by Dr. P. Scott Richards at Brigham Young University in Utah collected data as part of a larger study with Dr.'s Sarah Weinberger-Litman and Kathleen Galek at the HealthCare Chaplaincy in New York City. The purpose of this study was to explore the relationship between spirituality and eating disorder symptoms in undergraduate students.

Participants

Undergraduate women at Brigham Young University (BYU), a large private college in the Western United States, were recruited for this study through a classroom announcement in their classes at the Religion Department at BYU. The women ranged in age from 17 to 41. The mean age was 19.44 and the standard deviation was 2.380. Out of the 213 participants, 135 were freshmen, 27 were sophomores, 34 were juniors, 11 were seniors, and 6 were graduate students. 203 of the participants were single, 9 were married, and 1 did not report marital status. One

hundred ninety seven participants were White, eight were Asian, two were Hispanic, one participant was Black/African American, one was Pacific Islander/Hawaiian, one was Native American/Alaskan Native, two marked “Other” and one was missing data. All 213 participants were members of the Church of Jesus Christ of Latter-day Saints.

Procedures

Researchers recruited participants in religious education classes because religion courses are required of all BYU undergraduate students. Recruiting students through these classes ensured a larger variety of students from virtually all majors and class standings within the university. In the religion classes, the researchers made an announcement to recruit volunteers for the study. They briefly described the purposes of the study and passed around sheets for students to sign up. The students then came at the times they signed up to participate to designated research rooms in the McKay School of Education to fill out the survey packet.

Students were first given an informed consent document which explained the purposes of the study and their rights as participant, and were told they had a right to withdraw at any time. (See Appendix B for informed consent document). As an incentive for participating, students were told that they would be given a \$10 gift card to the university bookstore or to a local movie theater for participating in the study. Participants were given a packet of measures to complete, including a demographic survey, the Eating Attitudes Test, and Religious Orientation Scale, and a number of other measures that are not included in this study. When participants finished filling out the survey packet, they were debriefed and asked if they had any questions about the purpose of the study. Only a few of the participants had questions about the study and these were answered by research assistants.

Measures

The demographic survey included questions to determine height, weight, GPA, gender, marital status, year in school, racial identification, and religious background. Participants also answered items about whom they reside with, family income, whether the student was financially supported by their family, and credit card use.

The Eating Attitudes Test (EAT) is a widely used measure of disordered eating and the characteristics of eating disorders (Garner & Garfinkel, 1979). The abbreviated EAT-26, which will be used in this study, consists of 26 items, and includes the three subscales of Dieting, Bulimia/Food Preoccupation, and Oral Control. Response options include, “always,” “usually,” “often,” “sometimes,” “rarely,” or “never.” The EAT has demonstrated high reliability and consistency and is considered an effective screening tool in both clinical and non-clinical populations (Garner, Olmsted, Bohr, & Garfinkel, 1982; Garner & Garfinkel, 1979).

The Religious Orientation Scale is a 20-item scale that measures the constructs of intrinsic and extrinsic religious orientation (Allport & Ross, 1967). The intrinsic subscale consists of 9 items and the extrinsic subscale consists of 11 items. Cut-off scores on the intrinsic and extrinsic subscales are used to categorize individuals as high or low on each subscale resulting in four categories of religious orientation, including intrinsic, extrinsic, pro-religious, and non-religious or non-traditionally religious (Donahue, 1985). The ROS is the most widely used measure of religious orientation in the psychology of religion field (Donahue, 1985).

Data

Data from the demographic questionnaire, the EAT, and the ROS was entered into an Excel file by an advanced undergraduate student who was not associated with the study in any other way. Excel files were then converted into SPSS files. In order to examine whether age

mediates the relationship between eating disorder symptoms and religious orientation, a multiple regression analysis will be conducted using religious orientation (intrinsic and extrinsic) and age of participants as predictor variables of eating disorder symptoms.

Results

Descriptive statistics for the participants on age, intrinsic and extrinsic religiousness, and the EAT total scores and subscale scores are presented in Table 1. In this table, we see that the age range was restricted (mean=19.4, $SD=2.4$, skewness=5.6) and was skewed towards a younger age. Extrinsic religiousness in this population was not skewed (mean =30.7, $SD=5.3$, skewness= -0.1). Intrinsic religiousness (skewness=-1.1) and the EAT scores (skewness ranged from 1.0 to 1.9) were somewhat skewed, but not as much as age.

A multiple regression analysis of EAT scores, age, and intrinsic and extrinsic religious orientation, was completed for the EAT-26 total score as well as the three EAT subscales (bulimia, dieting, and oral control). Table 2 shows that the overall model predicting EAT Total Score was not significant ($F[3,196]= 2.615, p=.052, R^2= .038$).

Table 2 also reveals that the overall model predicting the Bulimia Subscale Scores was significant ($F[3,199]=3.974, p=.009, R^2=.057$). Extrinsicness was the only significant predictor in the regression model ($t = 2.961, p = .003$) for the Bulimia subscale of the EAT. Intrinsic religiousness was not a significant predictor in the regression model ($t = -1.319, p = .189$). Age was also not a significant predictor in either the regression model ($t = -.239, p = .811$).

Table 2 shows that the overall model predicting the Dieting Subscale was not significant ($F[3,198]=1.976, p=.119, R^2=.029$). The overall model predicting the Oral Control Subscale was also not significant ($F[3,197]= 1.639, p=.182, R^2=.024$).

Discussion

Summary of Results

This study aimed to determine whether religious orientation and age had a significant impact on eating disorder symptomology. These results answer the research questions listed below.

Research Question #1. Do intrinsicness, extrinsicness, and age in the presence of each other significantly predict eating disorder symptoms as measured by the total EAT score? Table 2 shows that intrinsicness, extrinsicness, and age in the presence of each other do not significantly predict eating disorder symptoms.

Research Question #2. In the presence of each other, which of these variables, if any, are predictive of bulimia, dieting, and oral control symptoms as measured by the subscales of the EAT? Table 2 shows that in the presence of each other, extrinsicness is predictive of bulimic symptomology, but intrinsicness and age are not.

The finding most of note in this study was that an extrinsic religious orientation was correlated with bulimic symptomology. In this sample, women with higher extrinsic scores had a slight tendency to have higher bulimia symptoms as measured by the EAT. This finding is consistent with the study by Smith et al (2003), which found a positive relationship between extrinsic religious orientation and eating disorder symptomology in a sample of undergraduate females at a small Midwestern university (Truman State University) and in a sample of females beginning inpatient treatment who had a diagnosis of bulimia nervosa. In both samples, women with an extrinsic religious orientation or an indiscriminately proreligious orientation had more eating disorder symptoms. These findings appear consistent with Joughin et al's (1992) finding

that higher levels of bulimia symptoms were correlated with a weakening in the self-perceived importance of the respondents' religious beliefs in a sample of over 800 ED sufferers.

The present study also sought to examine whether intrinsic religious orientation was related to eating disorder symptomology. Intrinsicness was not a statistically significant predictor of fewer ED symptoms. However, intrinsicness was not *positively* associated with ED symptomology either, meaning that people who were intrinsically religious or devout did not have more ED symptoms. This finding is also consistent with the Smith et al (2003) study.

Lastly, the present study evaluated whether age was a significant predictor of ED symptomology. In the multiple regression analysis conducted, age was not a significant predictor of ED symptomology, nor did it significantly mediate the relationship between religious orientation and ED symptoms.

Limitations and Strengths of the Study

There are some limitations to this study. First, the age range of the participants was restricted from ages 17-41. A study with a wider age range might have different findings. Second, only one religious affiliation was well represented, and results would be more generalizable with a more diversely affiliated religious population. Third, there is a possible restriction on religious orientation scores within this population as this population is skewed towards intrinsic religiousness. This skew could be affecting results, and having more equal representation from all four groups would provide useful information about religious orientation and eating disorder symptomology. Lastly, the participants were not randomly sampled, so we cannot generalize the results of this study to all female college students or even all female Brigham Young University students.

Despite these possible weaknesses, there were several strengths to this study. First, the sample size was good and increased the power of the study. Second, standardized measures of religious orientation and eating disorder symptomology were used, lending reliability and validity to the study. Third, a multivariate statistical procedure was used, which shows how age, religious orientation, and eating disorder symptomology were related to each other, and which variable had the strongest relationship with eating disorder symptoms in the presence of the others. Fourth, since this study was part of a larger study where a number of other measuring instruments were used, the purposes of this study were not clear to participants.

Conclusion

Although the present study was correlational in nature and cannot prove causation, its findings raise the possibility that religious orientation may have an impact on bulimic symptomology. It is possible that women who are involved in religion primarily for social (extrinsic) reasons may be at higher risk for developing bulimia. If women are more concerned about public appearances and how people view them, they may pick up more on messages in their religious culture about body shape and how they *should* look. There is no evidence from our study that higher levels of intrinsic religious orientation are associated with more eating disorder symptoms.

Future research could focus on a qualitative study of college women with clinical or subclinical bulimic symptoms to find out what messages they have about religious beliefs, culture, and messages regarding body shape. A longitudinal study of women's religious orientation and eating disorder symptoms over time could also have interesting results in this area, and could further help explore the relationships among eating disorders, age, and religious orientation.

The present study may have some implications for the treatment of people with eating disorders. This study adds to the body of literature empirically demonstrating that an extrinsic religiousness may be associated with bulimia symptoms. Clients may find that discussing this issue in therapy could be helpful for recovery from their ED. Therapists may wish to discuss how clients perceive their own religious beliefs and be open to discussing how these beliefs could be influencing their ED beliefs and behaviors.

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Table 1

Descriptive Statistics for Sample on Age, Intrinsicness, Extrinsicness, and Eating Attitudes Test

Variable	N	Mean	SD	Minimum	Maximum	Skewness
Age	213	19.4	2.4	17	41	5.6
Intrinsicness	208	38.0	3.5	22.0	45.0	-1.1
Extrinsicness	206	30.7	5.3	19.0	46.0	-0.1
EAT Total	209	61.3	15.6	31.0	143.0	1.5
Bulimia	212	11.1	4.2	6.0	36.0	1.9
Dieting	212	36.4	10.6	17.0	76.0	1.0
Oral Control	211	16.3	4.1	8.0	34.0	1.0

Table 2

Regression Model Summary and Coefficients for Variables Predicting Eating Attitude Test Scores

<u>Model Summary</u>	<u>R</u>	<u>R²</u>	<u>F</u>	<u>df</u>	<u>Sig</u>	<u>Predictors</u>	<u>β</u>	<u>t</u>	<u>Sig.</u>	<u>Zero Order R</u>	<u>Partial r</u>
EAT Total Subscale											
Enter Method	.20	.04	2.62	3	.052	Age	-.08	-1.18	.24	-.10	-.08
						Intrinsic	-.05	-.75	.45	-.07	-.05
						Extrinsic	.16	2.20	.03	.17	.16
EAT Bulimia Subscale											
Enter Method	.24	.06	3.97	3	.01	Age	-.02	-.24	.81	-.04	-.02
						Intrinsic	-.09	-1.32	.19	-.12	-.09
						Extrinsic	.21	2.96	.003	.22	.21

Table 2 continued

Regression Model Summary and Coefficients for Variables Predicting Eating Attitude Test Scores

Model Summary	R	R ²	F	df	Sig.	Predictors	β	<i>t</i>	Sig.	Zero Order R	Partial r
EAT Dieting Subscale											
Enter Method	.17	.03	1.98	3	.12	Age	-.08	-1.08	.28	-.09	-.08
						Intrinsic	-.07	-1.04	.30	-.09	-.07
						Extrinsic	.12	1.66	.10	.13	.12
EAT Oral Control Subscale											
Enter Method	.16	.02	1.64	3	.18	Age	-.09	-1.32	.19	-.10	-.09
						Intrinsic	.04	.60	.55	.02	.04
						Extrinsic	.12	1.63	.11	.12	.12

Appendix A – Literature Review

Eating Disorder Symptoms and Prevalence

Categories of Eating Disorders

Three categories of eating disorders are specified by the *Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition, Text Revision (DSM-IV-TR, [2000])*: Anorexia nervosa, bulimia nervosa, and eating disorders not otherwise specified (EDNOS). Anorexia nervosa is characterized by a refusal to maintain normal body weight, an intense fear of gaining weight, a distorted perception of body size and shape, and a loss of menorrhea in post-menarcheal females (absences of three or more consecutive menstrual cycles). This intense fear of gaining weight is exacerbated by weight loss, not alleviated by it, and weight loss efforts become more intense as the individual loses weight.

Within anorexia there are two subtypes, restricting type and binge-eating/purging type. Restricting consists of fasting, dieting, or excessive exercise, and excludes binge eating episodes. Binge eating and purging consist of consuming large amounts of food in a discrete period of time then purging by inducing vomiting, using laxatives, diuretics, or enemas. In addition to these physical symptoms, individuals with anorexia base their self esteem and worth on their body weight and shape (Daniels, 2009).

Bulimia nervosa is categorized by binge eating, purging, and having a negative self-evaluation influenced by body shape and weight (DSM-IV-TR, 2000). A binge is defined as a discrete amount of time (usually less than two hours) in which an individual eats more than most individuals would eat during a similar period of time. The individual also feels a lack of control over their eating during the binge episode, and will often eat until they are uncomfortably full. Individuals with bulimia nervosa do not necessarily complete their binge in one setting, and the

context of their consumption needs to be considered (e.g. a celebration or holiday meal would not typically be considered a binge). Purging can be completed through self-induced vomiting or the misuse of laxatives, diuretics, or enemas. As with anorexia nervosa, the individual's self worth depends on perceived success with their weight loss, and by their weight and shape (Daniels, 2009).

Eating Disorders Not Otherwise Specified are diagnosed when individual do not meet the criteria for either anorexia nervosa or bulimia nervosa. Examples of this may include an individual who binges but does not purge, who purges after a small amount of food is consumed, or who meets all the criteria for anorexia nervosa but whose weight is still considered in the normal range (American Psychological Association, 2000).

Eating Disorder Prevalence

Approximately eleven million people in the United States report suffering from anorexia or bulimia nervosa, with 90% of eating disorders being diagnosed in females (National Eating Disorders Association [NEDA], 2008). NEDA also reports that millions more Americans suffer from binge eating disorder (2008), and that many more have subclinical disordered eating. In general, eating disorders tend to occur in industrialized countries, where there is an abundance of food. In these countries, the ideal woman is portrayed as being thin, and this thinness is a sign of wealth or self-control (Varady, 2002).

The World Health Organization (WHO) found that the average age of onset for anorexia nervosa is between 14 and 18 years (2004). Bulimia nervosa tends to start during the transition time between adolescence and adulthood (Pyle, Neuman, Halvorson, & Mitchell, 1986; World Health Organization, 2004). Eating disorders can continue into adulthood, but adult onset of eating disorders is rare. The WHO also reported that 0.5% - 4.1% of adolescents and young

adults suffer from acute eating disorders, and another 5-13% of the population have partial syndrome eating disorders (2004). Other research has substantiated their research on prevalence (Daniels, 2009; Pyle et al., 1986).

In their review of the literature on eating disorder prevalence, Hoek and van Hoeken found that 0.3% of young females have anorexia nervosa, 1% of young women have bulimia nervosa, and 0.1% of young men have bulimia nervosa (2003). However, an accurate measure of the prevalence of eating disorders is hard to obtain due to only being able to measure those who seek treatment. Many people with eating disorders conceal their symptoms and avoid seeking professional help, which decreases the accuracy of reported eating disorder prevalence (Hay, 2003; Hoek and van Hoeken, 2003). Others have subclinical levels of eating disorders and do not meet reporting criteria (Daniels, 2009; Varady, 2002; World Health Organization, 2004).

Health and Emotional Effects

Eating disorders have physical, mental, and emotional effects for those who suffer from them. In a review of medical complications, Kaplan and Noble (2007) summarized six areas that are affected by eating disorders: (a) skeletal system, (b) reproductive system, (c) cardiovascular system, (d) brain, (e) gastrointestinal system, and (f) the hormonal systems. Berg (2001) found the following medical complications: imbalanced electrolytes; gastrointestinal problems; pulmonary, cardiovascular, metabolic, and renal changes; and hematologic problems.

Eating disorders have a high comorbidity rate with depression and anxiety (Berg, 2001; Herzog & Eddy, 2007; Varady, 2002). Pyle et al. (1986) found that students who had symptoms of bulimia had been professionally treated for anxiety and/or depression, but not specifically for bulimia. In their review of the literature, Herzog and Eddy (2007) found high comorbidity in both anorexia and bulimia nervosa with major depression, an anxiety disorder, and social phobia.

The onset of eating disorders is more likely to follow obsessive compulsive disorder, social phobia, specific phobias, and generalized anxiety disorder, while posttraumatic stress disorder, panic disorder, and agoraphobia are likely to occur at the same time as or after the onset of the eating disorder (Herzog & Eddy, 2007).

People who suffer from eating disorders report problems in their interpersonal relationships, work/school activities, family relationships, finances, and conflicts with religion and church (Pyle et al., 1986). Some studies have found comorbidity with alcohol or other substance use disorder, and this use may be due in part to its effect on anxiety reduction (Herzog & Eddy, 2007). Eating disorders have also been linked to personality disorders (PD), including borderline PD, avoidant PD, obsessive-compulsive PD and paranoid PD (Ro, Martinsen, Hoffart, and Rosenvinge, 2005; Spindler & Milos, 2004).

Treating mental disorders has been estimated to cost \$147 billion, more than cancer, respiratory disease, or AIDS, but costs are not only enormous and not easily measurable (WHO, 2004). Eating disorders specifically are a costly problem to treat, both medically and psychologically. It is estimated that eating disorder treatment costs approximately \$6 billion a year (Duncan, 2005; NEDA, 2008). Treatment costs include care by a primary physician, inpatient treatment, lost productivity at work or school, and occupational or educational impairment. The chronic nature and high comorbidity rate of eating disorders contribute to their higher cost of treatment (Simon, Schmidt, & Pilling, 2005). In many cases, patients are treated by their primary care physician for psychological or gastrointestinal complaints and the primary concern of the eating disorder is not recognized (Simon et al., 2005).

In addition to medical problems, social or interpersonal problems, and a high cost of treatment, anorexia nervosa has the highest mortality rate of any psychiatric disorder, in part due

to higher rates of suicide (Birmingham, Su, Hlynsky, Goldner, & Gao, 2005; Herzog et al., 2000; NEDA, 2008). While bulimia nervosa and EDNOS do not have as high mortality rates as anorexia nervosa, death from these disorders is possible (Crow, Praus, & Thuras 1999). Stice (2001) found that eating disorders have the highest rates of treatment seeking, inpatient hospitalization, and attempted suicide of common psychiatric disorders. Eating pathology also predicts the onset of obesity, which results in elevated morbidity and mortality (Stice, 2001). Because of the high cost of treating eating disorders and their elevated mortality rate, eating disorders are a public health problem.

Eating Disorder Etiology

Research on eating disorders has shown that they can be caused by many different factors, and that there is no one single cause of eating disorders. Risk factors work together to increase eating disorder risk, and the relationship between eating disorders is not fully understood. However, risk factors can be categorized into three main areas: body image concerns (physical risk factors), family and social influences, and “generic risk factors” (World Health Organization, 2004, p. 44).

Physical Risk Factors

While socioemotional factors can influence the development of eating disorders, they are not the only predictor of disordered eating. The WHO (2004) identified specific body image concerns such as extreme dieting, excessive shape or weight concerns, and body dissatisfaction as risk factors. Other physical risk factors include elevated adiposity, body and weight dissatisfaction, dieting/caloric deprivation, and puberty/stressful life transitions (Carroll & Spangler, 2002; Stice, 2001). Body dissatisfaction and dieting can also predict the onset of major depression (Stice, 2001). Franko and Striegel-Moore (2007) also found that gender, ethnicity,

shape and weight concerns, childhood eating and gastrointestinal problems can influence disordered eating. Negative affectivity, or the propensity to be emotionally distressed, can also promote bingeing, which predicts bulimic pathology (Stice, 2001).

Socioemotional Risk Factors

Family and social influences include low media literacy, internalization of the media's thin ideal, family beliefs about weight and shape, and sociocultural pressures to be thin (Carroll & Spangler, 2002; Stice, 2001; WHO, 2004). Wiseman, Gray, Moismann, and Ahrens (1992) found that the culturally desired body shape is becoming increasingly thinner, and that Miss America contestants between 1979 and 1988 had an average weight of 15% below expected for their age and height, meeting one of the criteria for anorexia nervosa. The cultural desirability of decreasing body size helps increase body dissatisfaction, dieting behaviors, and eating disorders (Carroll & Spangler, 2002).

Grenfell (2006) also discussed the effect religious beliefs have on individuals' perceptions of their bodies, particularly the emphasis on the religion's control over the individual's body in regards to spiritual and bodily cleanliness, codes of dress, and sexual purity. This leads to a feeling of increased importance of role of the individual's body, and imposes cultural values on what a person does with his or her body.

Other Risk Factors

Generic risk factors include low self-esteem, physical and sexual abuse, insecure attachment, difficulties coping with stress, negative self-evaluation and perfectionism (Franko & Striegel-Moore, 2007; Stice, 2001; WHO, 2004). Perfectionism and self-esteem may correlate with other risk factors to increase the risk of developing an eating disorder. Multivariate models have been proposed in which the focus is on the interaction between several risk factors. These

models propose interactions between developmental issues, dieting and self-esteem, socioemotional pressures and body dissatisfaction, perfectionism, self-esteem, and other factors (Stice, 2001). Since no one risk factor has been identified as the cause of eating disorders, these multivariate models come closest to explaining how eating disorders may develop.

While eating disorders are outwardly manifested as an intense fear of gaining weight, they are usually felt inwardly as an intense fear of loss of control. Bruch (1973), for example, was the first to describe those who suffer from eating disorders as having a feeling of being out of control. She stated that girls who develop eating disorders do so in an attempt to gain control over their bodies. Since then, researchers have focused on the role of control in eating disorders, and where the locus of control lies (Berg, 2001; Varady, 2002). People with eating disorders may feel that they lack control over too many aspects of their lives and thus attempt to make up for that lack of control through the sense of control gained by an eating disorder (Hardman, Berrett, & Richards, 2003; Rezek & Leary, 1991).

Rezek and Leary (1991) specifically found that loss of control in interpersonal settings induces reactions in people that a loss of control in impersonal settings does not, which can prime an individual to exercise control through an eating disorder. Rezek and Leary also found that perceived liking (how well subjects thought the listener liked them), social rejection, and social anxiety influence perceived control. Richards, Smith, Berrett, O'Grady, and Bartz (2009) detail ten dysfunctional beliefs individuals with eating disorders may have, including "my eating disorder will give me control of my life and emotions" and "my eating disorder will give me approval from others" (p. 174). These beliefs tend to alienate individuals with eating disorders from their family, friends, and their Higher Power, or God.

Age and Eating Disorders

With the average age of onset of anorexia nervosa between 14 and 18 and bulimia nervosa emerging during the transition time between adolescence and adulthood (Pyle, Neuman, Halvorson, & Mitchell, 1984; World Health Organization, 2004), college-age women have a particularly high risk of suffering from eating disorder symptoms. Moving away from home, experiencing higher stress, feeling pressured to achieve academically, and losing social support all increase the likelihood of a person developing an eating disorder (Winters, 2005). Social contagion and competition for marriage partners can also increase eating disorder risk for college-age women (Winters, 2005).

However, it appears that the highest time of risk for college-age women to develop eating disorders happens in their freshman or sophomore years, which happen at ages 18 and 19. Winters (2005) studied the prevalence of Brigham Young University (BYU) female students with eating disorders in a longitudinal study lasting four years. For three consecutive years, 1,800 randomly selected freshmen were given the EAT, BSQ, and a demographics questionnaire, and the total response population among all three years surveyed was 1,924. Women in the survey sample were predominantly Caucasian and members of the LDS church. Winters found that eating disorder risk decreased as participants progressed through their college years, with freshmen having the highest levels of risk for an eating disorder.

Heatherton, Mahamedi, Striepe, Field, & Keel (1997) completed a 10-year longitudinal study in order to see how eating behavior and eating disorder symptoms changed over time. They surveyed 715 people, 509 of which were female and 206 male. Participants were given the EDI and asked about general eating behaviors, abnormal eating behaviors, and body weight and shape concerns. Ten years later, participants were again surveyed using the EDI and similar questions.

Participants were grouped into 5 groups: nondieters, dieters, problem dieters, subclinical eating disordered, and eating disordered.

At the 10-year follow up, women had a decrease in bulimic attitudes, a strong decline in drive for thinness, and less self report of feeling that they were overweight. They also decreased chronic dieting and overall eating disorder symptomology. This may indicate that age and change in social influences (getting away from a college campus) can help decrease body dissatisfaction and disordered eating.

Lock, Le Grange, Forsberg, & Hewell (2006) compared adolescents with EDs to pre-adolescents with EDs to determine treatment effectiveness. 110 participants between the ages of 9-18.5 years were given the Eating Disorder Examination (EDE), and scores and symptomology between the groups were compared. The average age for pre-adolescents was 11.9 and for adolescents was 15.5 years. Lock et al. found that pre-adolescents had lower pre- and post-treatment assessment scores than adolescents. They also found that pre-adolescents had similar behavioral and personality traits as their adolescent counterparts. This study suggests that age may be predictive of how entrenched ED symptoms are in different age groups, and that age can mediate treatment effectiveness as well as risk factors for EDs.

Religiosity and Mental Health

Research in the past 40 years has focused on the role of religiosity in mental health (Allport & Ross, 1967; Bergin, Masters, & Richards, 1987; Fallot, 2007; Pargament, 2002). This research has determined that in addition to determining whether a person is “spiritual” or “religious,” the reasons why a person participates in spirituality are also important.

Spirituality/Religiosity Defined

Researchers tend to differentiate between religion and spirituality in their operational definitions. For example, Fallot (2007) defines spirituality as the dimension of personal experience related to the sacred, ultimate, or transcendent. In contrast, religiosity has an organizational dimension, usually involving a community of believers with a shared set of beliefs and religious practices. Richards and Bergin (2005) define spirituality as a search for and “attunement with God or the Divine Intelligence that governs or harmonizes the universe” (p. 22), and Pargament (2002) defines religiosity as “the search for significance in ways related to the sacred”. Oomen (2000) defines religiosity as “one’s practice of organized religion or belief system in devotion to a Higher Power” (p. 4). Differentiating between religiosity and spirituality may be important in researching the experiences of people with eating disorders because they may have narrow views of religion but can utilize spirituality in its wider definition and forms. For the purposes of this study, and because of the terminology of most of the research, the word religiosity is preferred in relation to mental health and eating disorders.

In his review of the literature, Fallot (2007) found that religiosity can either act as a buffer and a support for people with mental health issues or exacerbate the effects of the mental health issues. This is supported by research done by Allport and Ross (1967), Pargament (2002), Fabricatore, Handal, Rubio, and Gilner (2004), and Kendler, Liu, Gardner, McCullough, Larson and Prescott (2003). These researchers studied religious components such as personal devotion, intrinsic motivation, compassion, religious coping, tolerance, general religiosity, and forgiveness. It is important to note that studies about religion and well-being have had conflicting results, due in part to the ways that well-being is defined. However, when well-being

is defined in terms of religious orientation versus psychosocial orientation, it has been linked to greater mental health (Pargament, 2002).

Extrinsic Religiosity and Mental Health

Research on religiosity has examined the difference between extrinsic and intrinsic religious factors and their effects on mental health. Allport and Ross (1967) described people with an extrinsic orientation to religion as using their religion instead of living their religion. Such people may attend church for distraction, socialization, status, or sense of security. Pargament (2002) described extrinsic religiosity as imposed, unexamined, and reflective of an unstable relationship with God, and found that mental health is negatively impacted by extrinsic religiosity. Allport and Ross (1967) found that extrinsic religious behaviors negatively impact mental health, while intrinsic religious factors positively impact mental health.

Ryan, Rigby, and King (1993) reported that people who have a less intrinsic religiosity had more internal pressure and conflict and an external locus of control. When people with an extrinsic religious orientation engage in religious behaviors, they sometimes do so out of a sense of obligation or guilt, or because not doing so would create anxiety for them.

Intrinsic Religiosity and Mental Health

In contrast, Allport and Ross (1967) defined people with an intrinsic religious orientation as being motivated by religion, as living their religion instead of using their religion, and by striving for meaning and value. Intrinsic religious behavior tends to increase mental health and life satisfaction. Pargament (2002), for example, has shown consistent connections between positive styles of religious coping and better mental health outcomes. Falloot (2007) found in his review that older adults with depressive symptoms who were intrinsically religious experienced a shorter time to remission of their symptoms than adults with extrinsic religiousness or atheism.

To achieve better mental health, religious behaviors must be internalized, intrinsically motivated, and based on a secure relationship with God (Pargament, 2002).

Greater intrinsic religiousness has been linked to higher sociability, a sense of well-being, and intellectual efficiency (Bergin, Masters & Richards, 1987), and less anxiety, depression, and social dysfunction (Ryan, Rigby, & King, 1993; Kendler et al. 2003). People with greater intrinsic religiosity who engage in spiritual practices have greater stress reduction and improved coping ability (Jacobs-Pilipski, Winzelberg, Wilfley, Bryson, & Taylor, 2005). Intrinsically religious behaviors can also give people a greater ability to let go of control by allowing God to manage their lives, thus meeting their basic needs for control (Krause, 2009). Many times, these people believe that God will help them exercise greater control in their lives, instead of feeling that their lives are controlled by God.

Religiosity as a Negative Influence

Pargament (2002) noted that religious behaviors can either be harmful or helpful, depending on type of religion, criteria of well-being, the person, the situation and social context, and how well various elements of religious life are integrated into a person's experience. Self-image and self-concept thus may be negatively affected by religious beliefs. Judeo-Christian religions emphasize becoming perfect as a necessary goal for their parishioners. However, some people turn the religious goal of becoming perfect into perfectionism. Perfectionism is a personal standard, attitude, or philosophy that demands perfection and rejects anything less. Perfectionism can lead to an intense fear of failure, need for approval from others, self-loathing, negative views of God, extreme self-reliance, burn out, and dichotomous thinking (Edgington et al., 2008).

Richards et al. (2009) found that not being able to meet religious expectations led to a decrease in religious behaviors and a feeling of alienation from God. This finding was also seen

in Hardman, Berrett, and Richards's (2003) study, which reviewed the dysfunctional beliefs of women with eating disorders. Most of these beliefs lead eating-disordered individuals away from God, replacing the person's belief in God with their faith and trust in their eating disorder.

Religiosity as a Positive Influence

However, religion can also have a positive influence on people. Edgington et. al (2008) identified positive themes that can come from religious beliefs, including personal openness, acceptance of self and mistakes, a belief in a loving God, and a surrender to or acceptance of God's grace. These beliefs came as people were able to separate their religious beliefs from judgments about themselves. Richards, Hardman, and Berrett (2007) also found that people who have religious beliefs have a connection to a higher power and are able to feel and show more compassion and love.

The Role of Spirituality in Therapy

Although the majority of Americans consider themselves spiritual (Frazier, 2007; Pew Forum, 2010), spirituality as it applies to therapy has been under-investigated. Two possible reasons for this are that researchers and theorists do not agree on the role of spirituality in therapy and far fewer therapists operate on religious or spiritual practices in their personal lives (Frazier, 2007; Hathaway, Scott, & Garver, 2004). Freud believed that spirituality was an illusion that prevented people from confronting reality, while Jung posited that humans need a transcendent experience to give them resources to withstand the enticements of the world (Westgate, 1996). Maslow described the balance between self and Higher Power in terms of a transcendent self-actualizer. Some therapists and researchers currently have the same strong emotional reactions and beliefs about the role spirituality can play in therapy. Others do not realize the role spirituality can have in therapy until post-treatment surveys by patients reveal

spirituality as a helpful component in their recovery (Hsu, Crisp, & Callender, 1992; Mitchell, Erlander, Pyle, & Fletcher, 1989).

Starting in the 1960s, psychotherapists have become more open to the role that spirituality has in therapy (Blanch, 2007). This work started with Abraham Maslow, Victor Frankl, and others who were interested in how spirituality affects mental health (Blanch, 2007). Although research studies on spirituality and mental health are increasing in number (e.g. research on the spiritual bases of addiction and mental health recovery), the research on eating disorders and spirituality is somewhat scarce (for examples, see Berrett, Hardman, O'Grady, & Richards, 2008; Dell & Josephson, 2007).

Religiosity and Eating Disorders

Research on spirituality and eating disorders has several common themes. Ideas of self-denial and abstinence, particularly in connection with food, are common in many religions, including ancient Eastern religions such as Hinduism and Jainism, as well as Christianity (Baxter, 2001, Weinberger-Litman, 2008). From the Jewish laws of cleanliness to the Christian practice of fasting to the Seventh Day Adventist belief of not eating meat, what people put into their bodies is religiously prescribed. Self-denial can be seen as a means of penance for previously committed sins and a means of redemption (Baxter, 2001; Marsden, Karagianni, & Morgan, 2007) or as a means to purify the body and spirit (Bruch, 1973).

Self-denial is an important part of the Judeo-Christian tradition, but eating together is also part of these traditions, as evidenced by the social nature of prescribed feasts, familial and community conventions as well as the partaking of the blood and body of Christ in a sacramental ritual (Grenfell, 2006). In Catholicism, female saints fasted as a way to become more holy or pious (Grenfell, 2006; Richards et al., 2007). This practice is referred to as asceticism, or an

attempt to become holy through self-denial, and still continues in eating disorder behaviors today (Marsden et al., 2007).

In the last 20 years in non-denominational Christian religions, multiple diet programs have surged in popularity (Marx & Griffith, 2001). One popular teaching in this movement is that thinness is a matter of religious obedience and that people's weight is a reflection of their spirituality (Marx & Griffith, 2001). Although the means to achieve thinness are different from Catholic saints, the goal and the meaning assigned to weight loss are the same for modern Christians – that fat is sinful, and that through self-denial they can align their lives with God's will.

People who have eating disorders commonly feel ashamed, spiritually unworthy, abandoned by God, and have distorted images of God (Berrett, Hardman, O'Grady, & Richards, 2008). Shame comes from the dishonesty of the eating disorder and its incompatibility with the person's religious beliefs and includes the belief that the person is fundamentally flawed (Keith, Gillanders & Simpson, 2009). In addition, a distorted image of God is related to how some individuals see their parents, so understanding patients' views about their parents helps a therapist understand patients' views about God and religion.

Religiosity and anorexia nervosa. Some people with anorexia start or continue their anorexic behaviors to align themselves with what they think their Higher Power wants them to do. For instance, Baxter (2001) relates her patients describing anorexia as holy, pure, and good. Marsden et al. (2007) found that people with anorexia viewed their sacrifice as the ultimate form of penitence and that it also offered redemption from sin and greed.

Joughin, Crisp, Halek, and Humphrey (1992) surveyed 851 women registered with the Eating Disorders Association. These women were given the Eating Disorders Inventory (EDI)

and Religious Belief Questionnaire (RBQ). Joughin et al. found that women with anorexia nervosa who had stated a religious preference had a lower Body Mass Index (BMI) at their lowest weight than non-religious women with anorexia nervosa at their lowest weight. They also found that a decrease in BMI correlated with a decrease in perceived conflict between the moral guidelines of the individual's religion and their eating problem: as the person lost weight, they felt like they were living their religion better. This could be because religious individuals felt that their physical bodies were more aligned with their moral beliefs of asceticism (Joughin et al., 1992).

Religiosity and bulimia nervosa. Baxter (2001) hypothesized that bulimia is seen spiritually as weak and evil, and follow-up studies, which will be discussed in greater detail later, have shown that people with bulimic tendencies tend to place less importance on religion or have a weaker relationship with God or their Higher Power. One example of this is the study by Joughin et al. (1992), which found that in religious women with bulimia, increased eating disorder symptomology correlated inversely with importance of religion. The researchers theorized that the women in this study could not justify their behaviors in the context of their religious beliefs about the sin of gluttony.

Boyatzis and McConnell (2006) studied Quest orientation in relation to college-age women and eating disorders. Quest orientation is an existential questioning of and rejection of simple explanations about faith issues that individuals typically experience between the ages of 18 and 25. This transitional period requires more examination and allows for more ownership of one's faith and values. In the Boyatzis and McConnell study, 151 women who ranged in age from 18.6-25.3 years old completed a Quest scale, Body Esteem scale, and the Eating Disorder Inventory. The women were divided into three groups – freshmen and sophomores, juniors and

seniors, and college graduates. In freshmen and sophomore women, higher Quest scores (including doubting and openness to change) were linked with bulimia and body dissatisfaction. In junior and senior women, total Quest scores were not linked to body dissatisfaction, but openness to change scores were linked to higher body dissatisfaction and bulimia. In college graduates, higher existential questioning was marginally related to higher body dissatisfaction. These authors concluded that Quest has a negative, inconsistent relationship with well-being.

The link between religion and eating disorders. Previous studies have had mixed results in trying to link eating disorder behaviors, beliefs, and emotions to religion. Spirituality and religion per se may not be as important as how a person interprets his or her religion and his or her personal feelings about/relationship with God (Blanch, 2007). In addition, those with negative views about parental relationships may transfer these feelings onto God or their Higher Power, and they struggle to believe that they are capable of being accepted and loved (Marsden et al., 2007), thus influencing eating disorder symptomology.

Women with eating disorders also tend to have strong negative beliefs about themselves and their relationship with God. Hardman, Berrett, and Richards (2003) summarized 10 dysfunctional beliefs they have found in their work with over 350 women admitted to an inpatient eating disorder treatment program in Utah. Their participants suggested that they turned to their eating disorders instead of their belief in God to solve their problems or fix their mistakes. One of these dysfunctional beliefs, “My eating disorder will give me control of my life and emotions,” implies that women are scared or unwilling to give up control to God or their Higher Power and instead choose to give control to their eating disorder in an effort to gain control over their lives and themselves. It is important to note that these individuals are scared to

give up the control they feel their eating disorder gives them to anyone else, fearing that doing so will make them lose control of their environment (Hardman, Berrett, & Richards, 2003).

Another dysfunctional belief women with eating disorders have is that the eating disorder will make the person perfect. This belief turns the person away from God when the individual focuses on what they can do to be physically perfect at the risk of neglecting their spiritual growth and relationship with their Higher Power. In addition, many people with eating disorders believe that the eating disorder will somehow atone for mistakes they have made or trauma they have experienced in their past. This false belief does not allow for healing, forgiveness, or comfort that can come from the Higher Power.

This review shows that religion does not always prevent eating disorders; in fact, it can be harmful when the person with an eating disorder replaces God with their eating disorder. However, Hardman et al. found that women with eating disorders are able to give up some control of the eating disorder through their recovery. By doing this, they regain their power and begin to desire and build a relationship with God.

People with eating disorders can use religion as a strategy to help themselves cope, as Jacobs-Pilipski et al. found in their 2005 study. They surveyed 255 college-age women with increased risk for shape and weight concerns about their spiritual and religious beliefs. They found that religiously oriented college women with eating disordered behaviors were more likely to use prayer and meditation as coping strategies, where non-religiously oriented women from the same sample were more likely to use distraction as a coping method. The women who used prayer to cope with body image distress in this sample reported that prayer was an effective strategy, and the researchers' analysis showed that prayer was more effective than distraction at resolving body image concerns for the women in this sample.

Marsden et al. (2007) also realized that spirituality impacted recovery in their clinical work, and they wanted to provide more information about spirituality in clinical practice. To accomplish this, they completed a qualitative study of 10 women with eating disorders at a hospital inpatient unit. The researchers used a semi-structured 'depth' interview process in which questions were based on answers the participants had previously given. They found five main issues, including locus of control (religious and familial), moral dimensions of self-image such as shame or guilt, sacrifice/self denial, salvation (through God), and maturation of their view of the eating disorder as God saw it. For some women, eating disorders were seen as a rebellion against familial rules, then religious rules and ecclesiastical authority. Although participants reported a rebellion against ecclesiastical authority, they were still searching for moral self-control, and they felt like they could gain it through anorexia. Participants in this study expressed a need to make up for wrongdoing in their past, real or imagined, and they felt that they could do this through fasting, a method that was pleasing to God.

Participants reported feeling that with God's help they could get through their eating disorder and the challenges it presented but also that they had turned to their eating disorder to try to receive this salvation. Also, at the beginning of their eating disorder, participants reported feeling like self-starvation was in line with God's will, but as they began recovering, they began to feel that God did not want them to destroy themselves. This study is limited by its population and its sample size, as well as its religious homogeneity (all participants were affiliated with various Christian religions). The authors also stated that some participants confused aspects of religion with their eating disorder and struggled to separate the two.

Pollack (2003) was interested in how personal values contributed to eating disorder behavior, specifically how independence, interdependence, and giving as a result of religiosity

impacted these behaviors. She studied 95 Caucasian undergraduate and graduate female students at New York University. Participants were given the Hollingshead SES scale and were classified as being from higher socio-economic levels. Participants also completed the EAT and the EDI, as well as various values questionnaires. Pollack found that participants who valued religion highly had lower body dissatisfaction scores, but this scale measured extrinsic religious behaviors, not religious commitment.

Dancyger et al. (2002) reviewed the treatment of eight young Orthodox Jewish adolescents in a day treatment program in New York City to find out how the Jewish religion influences eating disordered behaviors. The adolescents were given the Beck Depression Inventory (BDI), Eating Disorder Inventory (EDI), and the Family Adaptability and Cohesion Evaluation Scale, and their Orthodoxy was verified by interview with one of the researchers experienced in Orthodox Judaism and then with an outside expert on the Orthodox community. Orthodox Jewish girls had a significantly longer length of stay than non-Orthodox adolescents, although there were not significant differences in self-reported depressive symptoms, disordered eating behaviors, or perception of family functioning. Dancyger et al. found that Orthodox Jewish adolescents showed more resistance to treatment, in part as a reaction to the threat of early marriage. The authors also reported that Orthodox Jewish patients typically present more severe psychopathology. The authors hypothesized that some eating disorder behaviors may be a form of rebellion to girls who are usually rigid, perfectionistic, and obedient and that it is in reaction to cultural and religious expectations.

Gluck (2000) surveyed 172 Caucasian female undergraduate students at colleges in the northeastern United States. Participants were given the Hollingshead scale (a measure of SES), the Eating Disorder Examination–Questionnaire Version (EDE-Q), the Body Shape

Questionnaire (BSQ), the Figure Rating Scale (FRS), the Sociocultural Attitudes towards Appearance Questionnaire (SOTAQ), the Rosenberg Self-Esteem Inventory (RSE), and the Religious Identification Questionnaire. None of the women in this study met the full criteria for an eating disorder.

Gluck found that secular women had more body dissatisfaction than Orthodox Jewish women on the BSQ but not on the FRS. Secular women also showed more eating disorder pathology on the EDE-Q than Orthodox women in the sample. Cultural attitudes influenced the BSQ, and when compared to the BSQ, the Hollingshead scale lost significance except as it measured cultural attitudes. Thus, the only sociocultural factor impacting eating disorders was cultural attitudes. The author also found that religious identification combined with religious group (Orthodox vs. secular) and media exposure acted as a buffer to body dissatisfaction. She noted that the Orthodox culture does not place as much emphasis on physical attractiveness as their secular counterparts, which could account for less body dissatisfaction and eating disorder symptomology. Gluck also noted that the Sabbath as practiced by Orthodox Jews may play a protective role for women, since aspects of it are linked to perceptions of control, and issues of control have previously been linked to eating disordered behaviors (Bruch, 1973).

In a survey study attempting to investigate the relationship between religious orientation and eating disturbances, Smith, Richards, and Maglio (2003) surveyed 129 female undergraduates from a small midwestern university and 316 female inpatient residents beginning treatment at a residential treatment center in Utah. Participants completed the EAT, the Religious Orientation Scale (ROS), and the Body Shape Questionnaire (BSQ). The authors found a positive relationship between eating disorder symptoms and extrinsic religiousness among women with bulimia or subclinical bulimic symptoms. They also found that people who are

extrinsically religious or indiscriminately pro-religious tended to have more eating disorder symptoms, but intrinsically religious and nontraditionally religious women had fewer symptoms.

These findings seem to support the hypothesis that women with anorexia find religious justification for their behaviors, while women with bulimia nervosa spiritually disconnect in an effort to justify their behaviors. This study also supported the idea that women with bulimia have more of an extrinsic religious orientation than an intrinsic religious orientation. However, since this was only one study, the results need to be replicated, and the authors suggest further research in this area.

Weinberger-Litman (2008) studied the role of religious orientation, spiritual well-being, body image development, and eating disturbances in Jewish women. Weinberger-Litman surveyed 301 adolescent and young women at two colleges and one high school in the New York City area. In addition to other measures, participants were given the EAT-26 and the ROS. Weinberger-Litman found that participants with a more intrinsic religious orientation had less body dissatisfaction, eating disturbance, and thin ideal internalization than women with extrinsic, indiscriminately pro-religious, or non-traditional religious orientation. Weinberger-Litman concluded that internalization of religious beliefs is protective against body image and eating disturbance. Weinberger-Litman also noted that the extrinsically oriented and pro-religious participants did not differ significantly from each other and explained that individuals who have both an extrinsic and intrinsic orientation will have more eating disordered behaviors.

Forthun, Pidcock, & Fischer (2003) studied 876 women at a large university in the southwestern United States. These women had familial risk factors that made them more vulnerable to developing an eating disorder (as measured by the General Family Functioning Scale of the McMaster Family Assessment Device and the Family Addiction and Recovery

Scale). Women from varied religious affiliations participated in their study (including Protestant/Christian, Catholic, and Jewish) and Forthun et al. found that religious affiliation did not significantly affect eating disorder symptomology. They found that an extrinsic religious orientation increased the likelihood that these women would develop an eating disorder. They also found that intrinsic religiosity acted as a protective factor for these women by decreasing the likelihood that these women would develop eating disorder symptoms, even when they had higher levels of risk from family factors.

Latter-day Saint religion and eating disorders. Few studies have been completed which look at the relation between the Latter-day Saint (LDS) religion and its relationship with eating disorder symptomology. One study that did focus on how religious affiliation, religious devoutness, or ethnicity affected eating disorder symptomology. Oomen (2000) studied 169 women at Texas Women's University and 169 women at Brigham Young University using the EAT-26 and the Intrinsic Religious Motivation Scale. The Intrinsic Religious Motivation scale measures the motivation behind religiosity (intrinsic vs. extrinsic religiosity). Oomen also used a factorial ANOVA to determine whether religious affiliation (Methodist, Catholic, Baptist, or LDS), religious devoutness, and/or ethnicity had an effect on eating disorder symptomology. Oomen found that the interaction between religious affiliation and religious devoutness had a significant effect on eating disorder symptomology only in the Baptist religion among women in the study. Religious devoutness alone had no effect on eating disorder symptomology; however, since the women in the study all self-reported higher levels of religious devoutness, the results may not have shown significance.

Oomen (2000) found that LDS women had the highest scores of religious devoutness and the lowest EAT-26 scores, but high devoutness in participants from other religions did not result

in lower EAT-26 scores. However, the levels of devoutness of LDS women in this sample could be confounding the relationship between devoutness and eating disorder symptomology since only three LDS women reported low devoutness. The author also reported that the women in this sample were more devout than participants in other studies, and that this sample reported less eating disorder symptomology than other samples. The results of this study appear to support the finding that intrinsic religiosity may protect individuals from depression and mental illness, but more research is needed to understand the relationship between religious orientation and eating disorder symptomology.

Another study done by Winters (2005) looked at the risk factors for women to develop an eating disorder through their college years. Winters used descriptive statistics to estimate the number of BYU women with an eating disorder, based on her sample, and estimated that 9 – 11% of BYU women have elevated eating disorder risk, with their level of risk and eating disorder symptomology decreasing each progressive year of college. The typical rate of eating disorder symptomology in a university is from 14.5 – 17%, so learning why BYU students have lower risk and symptomology would be valuable in preventing eating disorders at other universities. One major weakness of this study is its large attrition rate, which could affect the results.

Gochnour (2006) was interested in studying how college major choice was related to eating disorder prevalence. She used the same data as Winters (2005), with the same measures on the same population. Gochnour found that 12.5% of the women sampled were in the clinical eating disorder range, but that certain majors (such as dance, physical education, and communication) had higher than average levels of people meeting clinical significance for eating disorders. However, this study did not try to show causality, so we do not know if people with

higher risk of having eating disorders choose these majors, or if people in these majors have a higher risk of eating disorders due to their major.

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Appendix B – Survey Measures

A Study of Shopping and Eating Behaviors and Their Relationship With Religion and Purpose in Life

Consent to be a Research Subject

The Study: This study is being conducted by Scott Richards, a Professor of Counseling Psychology at BYU. The purpose of this study is to investigate the possible links between shopping patterns, eating behaviors, religious beliefs, and purpose in life. You have been invited to participate in the study because you are a BYU student and we would like to better understand BYU students' beliefs and behaviors about these topics.

Procedure: You will be asked to fill out a confidential questionnaire in a seminar room in 350 MCKB on the BYU campus which will ask general questions about your thoughts and behaviors about eating, shopping, religion, and life purpose. The questionnaire contains about 400 items and will take approximately 30-40 minutes to complete. When you complete the questionnaire, give it to the research assistant and he/she will place it in a sealed envelope and lock it in a file cabinet in Professor Richards' office. Do NOT write your name on the questionnaire packet.

Confidentiality: This survey is going to be used for research purposes only and there will be no attempt made to make any sort of diagnosis or judgment in regards to the responses received. The questionnaires will be completely confidential, and there will be no identifying information associated with them. The only individuals with access to the surveys will be the study's principal investigator and a limited number of trained research staff.

Potential Risks

There are minimal risks associated with participation in this study, although completion of the questionnaires could bring some painful emotions or concerns to the surface for some participants. If you experience painful emotions you may receive professional counseling for no charge at the BYU Counseling and Career Center which is located in 1500 WSC (or phone 422-3035).

Benefits

Participation in this study provides no direct benefits to you, though your reflections about the questions may serve to enhance your understanding of yourself. In addition, the results of this study could serve to improve the knowledge of shopping and eating behaviors and their relationships with purpose in life, religious orientation, and well-being.

Compensation

You will receive a \$10 gift certificate for participation in the study.

Participation

Participation in this research study is voluntary. You have the right to withdraw at anytime or refuse to participate entirely without jeopardy to your class status, grade or standing with the university.

Questions about the Research

If you have any questions regarding this study or for more information please contact Dr. P. Scott Richards at 422-4868 or by email at scott_richards@byu.edu.

Questions about your Rights as a Research Participant

If you have any questions regarding your rights as a research participant, you may contact Christopher Dromey, PhD, BYU IRB Chair, 422-6461, 133 TLRB, Brigham Young University, Provo, UT 84602, Christopher_Dromey@byu.edu.

I have read, understood, and received a copy of the above consent and desire of my own free will to participate in this study. The return of the completed questionnaire serves as my consent to participate in the research.

Dear Participant,

Thank you very much for agreeing to participate in our study. This is a confidential questionnaire which will take approximately 30-40 minutes to complete. Please answer the questions to the best of your ability. If you do not wish to answer a question, you may choose to leave it blank. Please follow directions when indicated. Your opinion and honest answers are important to us and will help us gain a better understanding of various psychological topics.

Thank you for your time and assistance!

Background Information

1. Gender: Male Female

2. Marital Status: Single Married Divorced Widowed

3. What is your age? _____

4. Your Height _____

5. Your Weight (lbs) _____

6. Year in School Freshman Sophomore Junior Senior

7. GPA _____

8. What do you consider to be your racial/ethnic group?

1) Black/African American

2) White

3) Pacific Islander/Hawaiian

4) Native American/Alaskan Native

5) Asian (Including Asian/Indian, Chinese, Filipino, Japanese, Korean, Vietnamese and other Asian).

7) Don't know

8) Other: Please specify _____

8a. Please feel free to provide any additional info about your racial identification.

9. Do you consider yourself Hispanic or Latino/a? Yes No

10. Religious Affiliation (Please specify denomination if appropriate):

1) Latter-day Saint _____

2) Catholic _____

3) Hindu _____

4) Jewish _____

5) Muslim _____

6) Protestant _____

7) Buddhist _____

7) Other _____

8) None _____

Please rate the following:

	Not at All				Very Much
11. How religious do you consider yourself?	1↑	2↑	3↑	4↑	5↑
12. How spiritual do you consider yourself?	1↑	2↑	3↑	4↑	5↑

13. Do you believe in God? ↑ Yes ↓No

14. Do you have a credit card? ↑Yes ↓No
10a) If yes, how many? _____

15. How much debt do you have on your credit cards (on all cards combined)?

- | | | | |
|-------------------|-------------------|---------------------|-------------------|
| 1. ↓None | 2. ↓under \$500 | 3. ↓\$500-\$1000 | 4. ↓\$1000-\$3000 |
| 5. ↓\$3000-\$5000 | 6. ↓\$5000-\$7500 | 7. ↓\$7500-\$10,000 | 8. ↓Over \$10,000 |

16. Do you live with your parents/family? ↑Yes ↓No

17. Are you supported financially by your parents/family? ↑Yes ↓No

18. What is your family's combined annual income?

- | | | | |
|------------------------|------------------------|---------------------|---------------------|
| 1↑< \$25,000 | 2\$25,000 – \$50,000 | 3\$50,001- \$75,000 | 4\$75,001-\$100,000 |
| 5\$100,001 – \$125,000 | 6\$125,001 – \$150,000 | 7>\$150,00 | |

19. If you are not supported by your family, what is your annual family/individual income?

- | | | | |
|------------------------|------------------------|---------------------|---------------------|
| 1↑< \$25,000 | 2\$25,000 – \$50,000 | 3\$50,001- \$75,000 | 4\$75,001-\$100,000 |
| 5\$100,001 – \$125,000 | 6\$125,001 – \$150,000 | 7>\$150,000 | |

Eating Attitudes Test (note: original font was 12 pt)

Please use the scale below to choose the number that best describes how often each item applies to you at the *present time*.

	Never 1	Rarely 2	Sometimes 3	Often 4	Usually 5	Always 6
1. I Am terrified of being overweight.	1	2	3	4	5	6
2. I avoid eating when I am hungry.	1	2	3	4	5	6
3. I find myself preoccupied with food.	1	2	3	4	5	6
4. I have gone on eating binges where I feel I may not be able to stop.	1	2	3	4	5	6
5. I cut my food into small pieces.	1	2	3	4	5	6
6. I am aware of the calorie content of foods that I eat.	1	2	3	4	5	6
7. I particularly avoid foods with high carbohydrate contents.	1	2	3	4	5	6
8. I feel that others would prefer if I ate more.	1	2	3	4	5	6
9. I vomit after I have eaten.	1	2	3	4	5	6
10. I feel extremely guilty after eating.	1	2	3	4	5	6
11. I am preoccupied with a desire to be thinner.	1	2	3	4	5	6
12. I think about burning calories when I exercise.	1	2	3	4	5	6
13. Other people think that I am too thin.	1	2	3	4	5	6
14. I am preoccupied with the thought of having fat on my body.	1	2	3	4	5	6
15. I take longer than others to eat meals.	1	2	3	4	5	6
16. I avoid foods with sugar in them.	1	2	3	4	5	6
17. I eat diet foods.	1	2	3	4	5	6
18. I feel that food controls my life.	1	2	3	4	5	6
19. I display self-control around food.	1	2	3	4	5	6
	Never 1	Rarely 2	Sometimes 3	Often 4	Usually 5	Always 6
20. I feel that others pressure me to eat.	1	2	3	4	5	6
21. I give too much time and thought to food.	1	2	3	4	5	6
22. I feel uncomfortable after eating sweets.	1	2	3	4	5	6
23. I engage in dieting behavior.	1	2	3	4	5	6
24. I like my stomach to be empty.	1	2	3	4	5	6
25. I enjoy trying new and rich foods.	1	2	3	4	5	6
26. I have the impulse to vomit after meals.	1	2	3	4	5	6

Religious Orientation Scale

Please answer the following questions to the best of your ability. If any questions are not applicable to you, or you do not consider yourself religious, please choose the answer you feel is most appropriate for you.

1. What religion offers most is comfort when sorrows and misfortune strike.
 - a) I definitely disagree
 - b) I tend to disagree
 - c) I tend to agree
 - d) I definitely agree

2. I try hard to carry my religion over into all my other dealings in life.
 - a) I definitely disagree
 - b) I tend to disagree
 - c) I tend to agree
 - d) I definitely agree

3. One reason for my being a member of my church/ synagogue/mosque/temple is because it helps me establish myself as a member of the community.
 - a) Definitely not true
 - b) Tends not to be true
 - c) Tends to be true
 - d) Definitely true

4. Quite often I have been keenly aware of the presence of God or the divine being.
 - a) Definitely not true
 - b) Tends not to be true
 - c) Tends to be true
 - d) Definitely true

5. The purpose of prayer is to secure a happy and peaceful life.
 - a) I definitely disagree
 - b) I tend to disagree
 - c) I tend to agree
 - d) I definitely agree

6. My religious beliefs are really what lie behind my whole approach to life.
 - a) Definitely not the case
 - b) Probably not
 - c) Probably
 - d) Definitely the case

7. It doesn't matter so much what I believe so long as I lead a moral life.
- I definitely disagree
 - I tend to disagree
 - I tend to agree
 - I definitely agree
8. The prayers I say when I am alone carry as much meaning and personal emotion as those said by me during formal services.
- Almost never
 - Sometimes
 - Usually
 - Almost always
9. Although I am a religious person I refuse to let religious consideration influence my everyday affairs.
- Definitely not true of me
 - Tends not to be true
 - Tends to be true
 - Clearly true in my case
10. If not prevented by unavoidable circumstances I attend religious services.
- More than once a week
 - About once a week
 - Two or three times a month
 - Less than once a month
11. Church/synagogue/mosque/temple is a very important place to form good social relationships.
- I definitely disagree
 - I tend to disagree
 - I tend to agree
 - I definitely agree
12. If I were to join a group associated with my place of worship:
- I would prefer to join a study group
 - I probably would prefer to join a study group
 - I probably would prefer to join a social group
 - I would prefer to join a social group
13. Although I believe in religion I feel that there are many more important things in my life.
- I definitely disagree
 - I tend to disagree
 - I tend to agree
 - I definitely agree

14. Religion is especially important to me because it answers many questions about the meaning of life.

- a) I definitely disagree
- b) I tend to disagree
- c) I tend to agree
- d) I definitely agree

15. I pray chiefly because I have been taught to pray.

- a) Definitely true of me
- b) Tends to be true
- c) Tends not to be true
- d) Definitely not true of me

16. I read literature about my faith.

- a) Frequently
- b) Occasionally
- c) Rarely
- d) Never

17. A primary reason for my interest in religion is that my place of worship is a congenial social activity.

- a) Definitely not true of me
- b) Tends not to be true
- c) Tends to be true
- d) Definitely true of me

18. It is important to me to spend periods of time in private religious thought and mediation.

- a) Frequently true
- b) Occasionally true
- c) Rarely true
- d) Never true

19. Occasionally I find it necessary to compromise my religious beliefs in order to protect my social and economic well-being.

- a) I definitely disagree
- b) I tend to disagree
- c) I tend to agree
- d) I definitely agree

20. The primary purpose of prayer is to gain relief and protection.

- a) I definitely agree
- b) I tend to agree
- c) I tend to disagree
- d) I definitely disagree

FINISHED!!!

Thank you so much for participating in our study!! Your time and contribution is greatly appreciated.