My body is a temple: Eating disturbances, religious involvement and mental health among young adult women

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Abstract

A growing body of literature outlines the undesirable mental health consequences of eating disturbances. However, little attention has been given to the possible mitigating effects of cultural institutions, such as religion, in the lives of women suffering from such pathologies. I address this omission by investigating the relationship between eating disturbances, religious involvement and mental health. This study (a) outlines a series of arguments linking eating disturbances, specific aspects of religious involvement, and mental health; (b) identifies several distinct hypotheses from this discussion; and (c) empirically tests these relevant hypotheses with a nationally representative sample of young adult women using data from Add Health. Various aspects of religious involvement diminish the deleterious effects of eating disturbances on depression and self-esteem, lending support for the moderating (buffering) model. I conclude by identifying the limitations of the present study and by suggesting promising directions for future research.

Introduction

Weight and dieting are issues readily discussed and acted on in the United States. Seventy percent of Americans are attempting to lose weight at any given time (Smolak 1996). However, eating disturbances[1], including excessive weight preoccupation and weight loss attempts, have reached alarming proportions among women (Mintz & Kashubeck 1999; Neumark-Sztainer 1995). Eighty percent of American women report dissatisfaction with their appearance (Grodin, 1996; Smolak 1996; Stice & Bearman, 2001), 62 percent report dieting in the past month (Polivy, 2002), and the incidence of eating disorders, such as anorexia and bulimia nervosa, have increased by 36 percent every five years since the 1950s (van Hoeken, Seidell & Hoek 2003). These behaviors and beliefs have become so common they are now considered "normative," with 80 percent of women reporting the experience of being female means "feeling too fat" (Rodin, Silberstein, & Striegel-Moore 1984; Steiner-Adair & Purcell 1996). Although widely accepted, the detrimental effects of eating disturbances are well founded. A number of studies conclude that excessive weight preoccupation and weight loss attempts are associated with numerous physiological and psychological consequences, including weight gain, depression, anxiety, reduced self-esteem and substance abuse (Blinder, Cumella & Sanathara 2006; Fernandex-Aranda 2007; Stice et al 2000; Eckert et al 1991; Nylander 1971).

With a growing body of evidence outlining the undesirable health consequences of eating disturbances, healthcare professionals and specialists have stressed effective

[1] An eating disturbance shares many similar characteristics with eating disorders, but is less severe in scope. As a result, many abnormal dietary patterns and behaviors, such as binge eating, excessive exercising, weight cycling, and chronic dieting may involve many of the same attitudes and impulses as eating disorders, though they do not meet the clinical criteria for diagnosis (Neumark-Sztainer 1995).

preventive interventions for decades (Shisslak et. al. 1987; Adams & Shafer 1988; Crisp 1988). Effective strategies include encouraging participation in environments and/or institutions where healthy attitudes toward food, weight and body are common and where skills for coping with stress are developed. In addition, developing an identity based on solid self-respect and self-esteem are suggested antidotes to obsessive dieting and body preoccupation. While supportive networks, such as family and friends, are vital for young women in developing and maintaining healthy body ideals, the possible moderating role of other cultural institutions, such as religion, have been largely overlooked. Hence, there remains a dearth of empirical work in regards to the mechanisms that thwart eating disturbances and their negative physiological and psychological effects

In the present study, I explore the relationship between the various facets of an eating disturbance (i.e., body weight dissatisfaction, extreme dieting efforts, binge eating and a prior diagnosis of an eating disorder) and religious involvement (i.e., attendance, private prayer, salience, and religious guidance), and the effects of each on depression and self-esteem in a nationally represented sample of young adult women. I present the paper in four parts. First, I outline a series of theoretical arguments on the potential relationships among religion, eating disturbances, and mental health outcomes. Second, I test a set of hypotheses, using data derived from the Public-Use National Longitudinal Study of Adolescent Health (Add Health). Third, I present the study results. Finally, I conclude with a discussion of the study limitations and promising directions for future research.

Theoretical and Empirical Background

Eating Disturbances and Mental Health

Eating disturbances frequently co-occur with a variety of mental disorders. It is well established that a majority of patients diagnosed with such disturbances also suffer from a variety of mental health issues, including major depressive disorder and other affect disorders, anxiety disorders, and compulsive disorders (Fairburn & Brownwell 2002; NIMH 2002; Steiner & Lock 1998; Yager 1996; APA 2000). However, the causal direction between eating disturbances and mental disorders remains unclear.

Depression is eating disturbances' most common co-occurring psychiatric problem (Bulik, 2002; Braun, Sunday & Halmi, 1994; Brewerton et al. 1995; Zerbe, Marsh & Coyne, 1993). Fifty to 75 percent of eating disturbance cases also suffer from depression (Halmi et al 1991; Blinder, Cumella, & Sanathara 2006). While depression generally appears concurrently with eating disturbances, it persists years following the initial onset of such disorders. Body dissatisfaction in early adolescence is associated with elevated depression in young adulthood (Measelle, Stice & Hogansen 2006; Ohring, Graber & Brooks-Gunn 2001), and individuals with eating disturbances are more likely to suffer from a lifetime prevalence of depression than comparison groups (Halmi et al 1991). As a result, Fernandex-Aranda et al. (2007) urge clinicians treating individuals with a new-onset of either an eating or affective disorder to remain vigilant for the emergence of additional psychopathologies, which typically emerge within the first three years following the onset of the first disorder.

In addition to depression, low self-esteem is strongly associated with eating disturbances (Kendler et al. 1991; Walters & Kendler 1995; Erkolahti, Saarijarvi, Ilonen

& Hagman 2002), and is generally considered a factor of vulnerability in the development of such disorders (Button, Sonuga-Barke, Davies & Thompson 1996; Canals et al 1996; Gaul et al 2002). Gual et. al (2002), for example, finds the prevalence of eating disturbances to be 14 times higher for those with low self-esteem. Within clinical samples, patients with eating disturbances have reported lower self-esteem than patients suffering from adjustment disorders, conduct disorders, and impulse control disorders (Silverstone & Salsali 2003). Furthermore, there is evidence to suggest that low self-esteem is not just a consequence of depression among those with eating pathologies, but a symptom in and of itself (Silverstone 1990). Silverstone and Salsali (2003) conclude:

> The overall findings from the studies to date, including the present study, is that patients with eating disorders have very significant lowering of self-esteem that may predate the onset of the disorder and contribute to its development…The occurrence of these disorders subsequently lowers self-esteem even further. When more than one psychiatric disorder is present then the effects of self-esteem are additive.

Prior theory and research suggests a number of possible explanations for the co-occurrence of eating disturbances and other mental disorders. First, in instances where affect disorders emerge first, symptoms associated with such disorders like depression - i.e., loss of appetite - may activate a vulnerability to eating disturbances. Second, when eating disturbances develop first, aspects of the disorder, such as malnutrition, may serve as triggers to an underlying susceptibility to psychiatric problems. Third, popular cultural belief may serve as a primary reason for the development of such disorders. Ironically, the normative belief that weight loss leads to improved self-esteem, self-confidence, and happiness (ANRED 2007) contributes to the development of eating or affect disorders. Women, who begin healthy dieting and/or exercise practices, with time become locked

into a cycle of excessive, unhealthy weight preoccupation that only exacerbates an already existing depression and low self-esteem or fosters the development of these negative psychological responses. Regardless of where individuals enter the cycle of eating disturbances or affect disorders, the consequences of both are damaging to well-being and life chances.

Religion and Mental Health

In the past two decades the body of empirical research on religion and health has grown. Most notable is a burgeoning literature which explores the relationship between religion and mental health. Although inconclusive, religion, variously defined, has been linked to better mental health outcomes, including lower levels of depression and anxiety, enhanced self-esteem and personal mastery, as well as decreased thoughts of suicide and risky health behaviors (Stark 1970; Bergin 1983; Gartner, Larson & Allen 1991; Koenig 1994). Religious indicators, such as personal piety, religious devotion (i.e., frequency of prayer, feelings of closeness to God), subjective religious identity, and religious involvement, have all been linked with well-being (Pollner 1986; Levin, Chatters & Taylor 1995). In addition, Schnittker (2001) find that some forms of religious involvement (namely, religious salience and spiritual help-seeking) buffer the negative effects of stress. These findings suggest that religion may be a helpful component in fostering and maintaining both mental and physical health throughout the life-course. Given these findings, researchers have sought to identify the means by which religion positively influences well-being. As a result, the relationship between religion and mental health is considered multifaceted, including both social and private dimensions. Current theories suggest religion works through the following mechanisms to foster

mental health: (a) directives for maintaining healthy lifestyles and behaviors; (b) increased social integration and support; (c) promotion of positive self-perceptions (i.e., self-esteem and personal mastery); (d) provision of systems of meaning and existential coherence (i.e., hope and optimism, forgiveness, and gratitude); and (e) healthy coping strategies, practices, or styles in the face of stress. Although distinct, these mechanisms or pathways in which religion exerts positive influences are connected, and potentially reinforcing, factors that help to explain the "religion-health connection."

Understanding the role of religion during the transition to adulthood has become an area of interest in recent scholarship (Arnett & Jensen 2002; Eliassen, Taylor & Lloyd 2005). Research suggests that although emerging adulthood, the period from mid-adolescence to the mid-20s, is a time of questioning religious belief structures (Barry & Nelson 2005; Arnett & Jensen 2002), religion continues to influence positively the decision-making of young people. Indeed, regular religious involvement has been found to reduce the rate of participating in risk-taking behaviors for emerging adults, such as sexual activity and excessive drinking (Crockett et al. 1996; Jessor & Jessor 1975; Miller & Olson 1989; Studer & Thornton 1987; Thornton & Camburn 1989). In addition, while major depression is a particular concern during the transition to adulthood – as this period has been characterized by a high onset of depression (Blazer, Kessler, McGonagle & Swartz, 1994; Burke, Burke, Regier & Rae 1990; Kessler et al. 1994; Reinherz et al 1999) – Eliassen et al. (2005) find that depressive symptomatology varies by the degree of religiosity, especially for young adult women. More specifically, net of SES, social support, and social stress, higher levels of subjective religious practices predicts lower levels of depression among women who are more religious. Furthermore, they find that

young women who are less religious overall tend to increase their frequency of prayer when depressed (Eliassen, Taylor & Lloyd 2005). These results suggest religion may be an especially important factor in women's well-being, "serving as an important source of role identity" (Eliassen, Taylor & Lloyd 2005, Kress & Elias 2000) during their transition to adulthood. Nevertheless, previous studies have neglected to explore the relationship between eating disturbances, religion, and mental health within emerging adult women.

Eating Disturbances, Religion, and Mental Health

How might religious involvement mitigate the effects of eating disturbances on mental health? First, religious communities act as a safe environment for participants (Sherkat & Ellison 1999; Ellison & Levin 1998). Embeddedness in religious communities - via involvement in collective worship activities and/or small group interactions (i.e., Bible studies or Sunday schools classes) – may offer opportunities for regular social interaction with those sharing similar values and beliefs (George, Larson, Koenig & McCullough 2000). These informal communities are instrumental in providing aid to members in need of companionship and comfort, while engagement in religious services may also serve to establish a strong sense of being loved and appreciated (Pargament 1997). For those struggling with food and their bodies, the acknowledgement and affirmation provided in these interactions may help to mitigate the negative beliefs they possess about themselves. Thus, while facing social pressures to be thin, the loving support offered through religious institutions (or members of religious institutions) may affirm one's innate significance while simultaneously affirming one's significance in the lives of others.

Second, traditional religious teachings – appearing in most faith traditions – promote a principle of self-care. For example, in the Judeo-Christian tradition, the Bible speaks metaphorically of the body as being a house of God. I Corinthians states, "Do you not know that your body is a temple of the Holy Spirit, who is in you, whom you have received from God? You are not your own; you were bought at a price. Therefore honor God with your body (1 Cor. 6:19-20, New International Version)." Young women who internalize such beliefs may be more comfortable with their bodies and less likely to develop eating disturbances, because they have found significance outside of their physical appearance. Furthermore, individuals who perceive a close relationship with God, i.e. 'being a child of God' (1 John 4:4, New International Version), may experience elevated feelings of self-worth or purpose. The internalization of such beliefs about the body, or self, may reduce the relative risk of performing the harmful behaviors associated with disordered eating or provide support and comfort for those performing such behaviors, thus reducing the detrimental effects of these beliefs and behaviors on mental health.

Hypotheses

The foregoing discussion suggests several hypotheses that will guide the remainder of this study:

H_1: Eating disturbances in young women may result in (a) elevated depression and (b) lowered self-esteem.

H_2: The various facets of religion (attendance, private prayer, salience, and religious guidance) may have salutary effects on mental health, thus offsetting the negative effects of eating disturbances on (a) depression and (b) self-esteem.

H_3: Religion may mitigate the harmful effects of eating disturbances on (a) depression and (b) self-esteem in young women. Religious themes and/or communities that emphasize self-acceptance may buffer or reduce any negative effect of eating disturbances on well-being. The buffering model entails statistical interaction.

Data and Methods

To investigate these hypotheses, I utilize data from the Public-Use National Longitudinal Study of Adolescent Health (Add Health). Sponsored by the National Institute of Child Health and Human Development (NICHD) and other federal agencies, Add Health is the largest, most comprehensive survey of U.S. adolescents to-date. In brief, Add Health is a school-based, longitudinal study of the health-related behaviors of adolescents and their continued maturation to young adulthood. Beginning in 1994, the study follows respondents in a series of in-home interviews approximately one, two, and six years later. The sampling methods of Add Health have been described in detail elsewhere (Popkin & Udry 1998; Gordon-Larsen, McMurray & Popkin 1999).

For the analyses, I utilize data from wave 3 of Add Health, in which respondents are between the age of 18 to 26. Although preoccupation with weight and body image emerge in girls at younger ages (Neumark-Sztainer 1995), the most common ages of diagnosis for eating disturbances continue to be between the ages of 14 and 25 (Cavanaugh & Lemberg 1999), ages at which there is more freedom to make individual choices concerning dietary habits. For this reason, wave 3 of Add Health was most appropriate for the current study. In addition, wave 3 contains: 1) sound measures of religious beliefs and behaviors; 2) approximate measures of other eating disturbance

outcomes, some of which are not available in earlier waves; and 3) well-known and validated measures of key co-occurring affect disorders associated with eating disturbances, including depression and self-esteem.

A total of 4,882 of the original Wave I respondents were re-interviewed between August 2001 and April 2002. However, since the majority of those who diet excessively and develop disordered eating behaviors continue to be female, I drop males from the present study. After delimiting the dataset in this way, and adjusting for missing values on key variables, the N for my analyses is 2351.

Dependent Variables

Depression. To measure depression, I use a nine-item version of the widely accepted Center for Epidemiological Studies Depression Scale (or CES-D) (Radloff 1991) (alpha=.83). Respondents were asked, "How often was each of the following things true during the past seven days?": "bothered by things that do not usually bother you," "could not shake off the blues, even with help from your family and your friends," "you are just as good as other people," "trouble keeping your mind on what you were doing," "you were depressed," "too tired to do things," "you enjoyed life," "you were sad," and "people disliked you." For these items, response categories include (0) never or rarely, (1) sometimes, (2) a lot of the time, and (3) most of the time or all of the time. Items were recoded as necessary so that a higher score denotes a higher depressive state, and the mean score was taken across the nine items.

Self Esteem. Add Health also asked a series of questions that gauge the respondents' level of self acceptance. These questions were used to create a self-esteem index (alpha=.78). Respondents were asked if they: (a) had a lot of good qualities; (b)

had a lot to be proud of; (c) liked themselves just the way they are; (d) do everything just about right; (e) are attractive; (f) are intelligent; and (g) are confident. Items: a lot of good qualities, a lot to be proud of, like myself just the way I am, and do everything just about right, had response categories ranging from "1=strongly agree" to "5=strongly disagree." Items: attractive, intelligent and confident ranged from "1=very" to "4=not at all;" for these items responses were multiplied by 1.25 to create a consistent matrix. All items were reverse coded so that a higher score indicates a higher self-esteem, and the index was created by taking the mean score across the seven items.

Key Independent Variables

Eating Disturbances. In this study, I consider four aspects of eating disturbances. First, I gauge *body weight dissatisfaction* with responses to the following item: "How do you see yourself in terms of weight?" Responses ranged from "very underweight," "slightly underweight," "about right," "slightly overweight" or "very overweight." A binary variable was made to distinguish those who perceived themselves as being "very" or "slightly" overweight (scored 1) to all other categories (scored 0).

Second, I determine *extreme efforts* to lose weight by the respondent's answer to the question: "During the past seven days, which of the following things did you do in order to lose weight…?" "fasted or skipped meals," "made yourself throw up," "took weight loss pills," "took laxatives," "used diuretics – that is, water pills," "food supplements – that are supposed to take the place of meals or to reduce appetite" and "participated in an organized weight-loss or weight-control program." This indicator was created using a dummy variable if respondents marked "yes=1" to at least one of the six extreme means of weight loss.

Third, I assess *binge eating* using responses to: (a) "In the past seven days, have you eaten so much in a short period that you would have been embarrassed if others had see you do it?" and/or (b) "In the past seven days, have you been afraid to start eating because you thought you wouldn't be able to stop or control your eating?" If respondents answered yes to either (or both) question(s), they received a score of one (1=yes), and all others a zero (0=zero).

Lastly, to establish whether respondents were previously *diagnosed* with an eating disturbance, I utilize the following question: "Have you ever been told by a doctor that you have an eating disorder, such as anorexia nervosa or bulimia?" Persons who reported such experiences were identified with a dummy variable (1=yes, 0=no).

Key Independent Variables

Religion. Independent variables regarding religion were (a) *attendance*, (b) *private prayer*, (c) *salience*, and (d) *religious guidance*. *Attendance* was measured using responses to the item "How often have you attended religious services in the past 12 months?" Responses ranged from "0=never" to "6=more than once a week". The frequency of *private prayer* was measured via "How often do you pray privately, that is, when you're alone in places other than a religious assembly?" Response categories ranged from "0=never" to "7=more than once a day." Respondents were asked "How important is your spiritual life to you?" to measure *religious salience*; responses on this item ranged from "0=not important" to "3=more important than anything else." Measuring the role of religion in the daily lives of respondents involved assessing their (dis)agreement with the following item, "I employ my religious or spiritual beliefs as a basis for how to act and live on a daily basis." Responses on *religious guidance* range

from 1=strongly agree to 5=strongly disagree. All items were reverse coded, as needed, so that a higher score reflects higher religious outcomes.

Covariates

Mediating factors: I also measure factors that have been shown to significantly affect depression in young adults. A growing body of literature suggests that romantic involvement has a substantial effect on the level of depression in young adults (Joyner & Udry 2000). To take this into account, I consider *romantic relationship attachment* at the time of the interview. First, a dummy variable was created for those not currently involved in a romantic relationship (*No Romantic Partner*). Second, respondents involved in a romantic relationship were asked to indicate how close they felt to their partner from a series of images responses ranged from "1=not connected" to "7= very connected". Third, in an effort to retain missing cases, the mean score was imputed for respondents who either refused or did not answer the relationship attachment question, and a dummy variable was created to flag these cases. Additionally, an indicator of *living with biological parents* was created to gauge the effect of parental relationships on depression in young adult women.

Moreover, since *stressful life events* are a catalyst for elevating depression (Kendler, Karkowski & Prescott 1999) I consider a series of items for this effect (alpha=.74), including "In the past 12 months have you…." (a) been sick or had symptoms of a health problem, (b) been injured by accident, (c) had a problem related to having sex, (d) had financial problems (i.e., did not have enough money to pay rent, gas or electric bills, and/or seek medical attention), and/or (e) been convicted or pleaded guilt

to a crime in an adult court. Responses ranged from "1=yes" to "0=no"; a mean index was created as an overall indicator of stressful life events.

Demographic Controls. In addition to relationship attachment, parental involvement, stressful live events, and the key variables of interest (eating disturbances and religion), I control for several sociodemographic factors in the regression models: race (1=white, 0=other), age (measured in years); and education (i.e., measured in highest grade or year of school completed), as well as the respondent's body mass index (BMI), that is a ratio of weight to height.. BMI is calculated by using self-reports of {weight (pounds)/ height (inches)^2 x 703}. By controlling for BMI, I am able to test the effects of body weight perceptions on well-being, net of the empirical reality of the respondent's actual body size.

[Table 1 about here]

Descriptive statistics on all variables used in my analyses are displayed in Table 1. According to these data, body shape and size are a general concern among young adult women. Forty-eight percent of respondents consider themselves to be overweight, while nearly 21 percent practice extreme dieting methods in an effort to lose weight. In terms of the key religious variables, on average, respondents pray privately once a week, consider religion to be somewhat important, and attend religious services several times a year.

Analysis and Results

To assess the hypotheses of the study, I begin by estimating a series of OLS regression models gauging the net effects of (a) eating disturbances and (b) religious involvement on depression and self-esteem. Model 1 includes only demographic controls.

Model 2 includes all other covariates; model 3 adds variables on eating disturbances; and model 4 (the full model) introduces the religious involvement variables. This design allows me to explore the offsetting hypothesis of religious involvement on mental health. Next, I add a series of cross-product interaction terms (i.e., eating disturbance x religious involvement) to test the interactive (buffering) model, in which religious involvement is hypothesized to diminish the deleterious effects of eating disturbances on depression and self-esteem. Although a number of different effects were estimated, I present only the statistically significant findings.

[Table 2 about here]

Table 2 displays the results of the OLS regression models estimating the net effects of eating disturbances and covariates on depression. A brief look at models 1 and 2 shows depression is associated with several sociodemographic variables, as well as romantic relationship connectedness and stressful life events in young adult women. With regard to eating disturbances, in model 3 I find strong support for hypothesis 1a. Respondents with eating disturbances exhibit higher levels of distress than others. Indeed, in model 3 the estimated net effects of participating in binge eating ($b=.554$, $p<.001$) and extreme dieting behaviors ($b=.113$, $p<.001$) and a prior diagnosis of an eating disorder ($b=.223$, $p<.001$) are all significantly related to depression. Taken together, these eating disturbance predictors account for a nontrivial proportion of the overall variance in well-being – as much as 15 percent according to model 3. Furthermore, the results of model 4 suggest little support for the offsetting hypothesis 2a. Most notably, religious attendance is the only predictor significantly related to depression indicating that, net of eating disturbances and all other covariates, as the frequency of

religious attendance increases, distress scores decline (b=-.024, p<.001). However, in the full model, eating disturbances remain strong predictors of depression in young women.

[Table 3 about here]

Results of Table 3 also shed further light on the relationship between eating disturbances, religious involvement and mental health. Similar to depression, eating disturbances are negatively associated with self-esteem, lending support for hypothesis 1b. As expected, body weight dissatisfaction (b=-.180, p<.001) and prior a diagnosis of an eating disorder (b=-.253, p<.001) result in lower scores on self-esteem, while binge eating (b=-.165, <.10) is negatively (but marginally) associated with self-esteem. In contrast, extreme dieting efforts is not related to self-esteem (b=-.032, ns). With the introduction of religious factors, there is tentative support for the offsetting hypothesis. For example, private prayer (b=.015, p<.05) and religious salience (b=.066, p<.01) are factors which predict higher self-esteem in young women. Taken together, eating disturbances, religious involvement, and other covariates account for a modest proportion (11-12 percent) of the variance in self-esteem, according to model 4. Moreover, an F-test (not shown) indicates that these religious predictors add significantly to the predictive power of the model.

[Table 4 about here]

Turning to the interactive models on depression, there is clear evidence for the hypothesized role of religious involvement buffering the negative impact of eating disturbances. The main effects of eating disturbances (i.e., body weight dissatisfaction, binge eating, extreme efforts, and diagnosis) are strongly and positively associated with depression in young women. As hypothesized, however, the cross-product terms are

significant and negative. For example, for young women participating in extreme dieting efforts, as well as those with a previous diagnosis of an eating disorder, frequency of religious attendance reduces feelings of depression associated with these outcomes (b=-.017, p<.10). Similarly, for persons suffering from binge eating and a prior diagnosis of an eating disorder, private prayer (b=-.103, p<.01) and religious guidance (b=-.151, p<.01) reduces the effect of such behaviors on depression. At the same time, the addition of the interaction terms add significantly to the predictive power of the model.

[Table 5 about here]

Finally, similar results are found for the buffering effects of religious involvement on self-esteem. While main effects for eating disturbances are negative and strong, indicating that women who suffer from such disturbances tend to have lower self-esteem compared with others, the cross product terms are significant and positive, confirming that respondents suffering from an eating disturbance, who have strong religious involvement have better self-esteem. The results in Table 5, show that frequency of religious attendance aids in maintaining higher levels of self-esteem for women suffering from extreme dieting efforts and a prior diagnosis of an eating disorder. Similarly, private prayer (b=.032, p<.01) and religious salience (b=.107, p<.01) aid young women in preserving self-esteem in the face of extreme dieting efforts.

Discussion

Many young women in America are at war with their bodies – a battle that taxes not only their physical health, but their mental health as well. However, little attention has been given to the possible mitigating effects of cultural institutions, such as religion, in the lives of women suffering from such pathologies as eating disturbances. The aim of

the present study is to address this gap in the literature on religion and health. I address this issue by: (a) outlining a series of arguments linking eating disturbances, specific aspects of religious involvement, and mental health; (b) identifying several distinct hypotheses from this discussion; and (c) testing empirically these relevant hypotheses with a nationally representative sample of young adult women in the US. Results of the analyses support the hypothesis that various aspects of religious involvement buffers against the deleterious effects of eating disturbances on depression and self-esteem. However, this relationship varies depending on the aspect of an eating disturbance in which women are struggling. Specifically, religious attendance seems to buffer the negative effects of extreme dieting and a prior diagnosis of an eating disorder, while private prayer and religious salience mitigate the effects of binge eating and body weight dissatisfaction.

Why might frequency of religious attendance buffer the effects of extreme dieting and a prior diagnosis of an eating disturbance? Research suggests that religious attendance may act as a unique form of social integration unlike any other form of social engagement (Pargament, Magyar-Russell & Murray-Swank 2005). For some, religious communities function as a source of love and encouragement and a tool in understanding and coping with life events by offering guidance, support, and hope (Wahking 1966). Learning to trust and find people to express emotions and feelings is a large part of recovering from an eating disturbance (Something-Fishy 2007). For some young women, the acceptance and support provided by select members in their religious community may prove to be beneficial. For one young women struggling with an eating disorder beginning in her late teens, this was her experience. "My faith saved my life…Church

provided the emotional safety nets of prayer, community and spiritual counseling." (Liu 2007:61). For young women struggling with food and their weight, religious communities may provide them the unique opportunity to find supportive relationships – i.e., women's ministries or small life-groups – that do not focus on body weight or shape, but encourage personal growth outside of these external pressures. The smaller, more supportive niches, found within larger religious communities, may make women feel less pressured to continue participating in such activities. Moreover, research has found that religion provides more reliable networks in times of adversity (Maton & Rappaport 1983; Dillon and Wink 2007). With opportunities to speak with consistent support networks, including pastors and/or women's ministry leaders, about the problems they face, women may feel they have a healthy outlet to discuss issues concerning body shape and size.

Additionally, research finds that more religious individuals are involved in social activities like visiting with family and friends, community helping activities, and creative activities, such as painting or singing (Dillon & Wink 2007). Literature on recovery from an eating disturbance suggests that women find positive methods of dealing with their emotions and stress, rather than turning to such behaviors like starving, binging and purging, or overeating. The healthy coping resources provided by religious institutions may pull women out of the cycle of dieting, depression and lower self-esteem.

In addition to the effects of religious attendance, I also find that forms of personal religious devotion (i.e., private prayer and religious guidance) lessen the deleterious effects of binge eating and body weight dissatisfaction on depression and self-esteem. What factors of personal religious devotion may explain this effect? Individuals who find comfort in private prayer and religious guidance may benefit from a strong sense of

identity and feeling connected with God, and find intrinsic worth and significance (Black 1999; Poindexter et al. 1999) in such activities, outcomes that may prove vital for women suffering from eating disorders. A primary explanation for why eating disturbances are attractive sources of coping is that food intake (or lack thereof) becomes a means by which women feel they have control and a sense of purpose. In the words of Caroline Knapp (2003:8-9), an American writer and columnist recounting her own experience with anorexia:

> Starving, in its inimitably perverse way, gave me a way to address the anxiety I felt as a young, scared, ill-defined woman who was poised to enter the world and assume a new array of rights and privileges; it gave me a tiny, specific, manageable focus…At a time when I felt adrift and confused and deeply unsure of myself, starving gave me a goal, a way to stand out and exert control…

If religion fosters personal mastery and a sense of identity (Kress & Elias 2000), especially for groups subject to the questioning of their self worth, including African-Americans and the elderly, religion may bolster the beliefs of self-efficacy and personal mastery for women struggling with food and their bodies. If a primary consequence of an eating disturbance is the loss of self-esteem or personal identity, than finding new ways to define themselves – outside of body weight and shape – must be a primary focus of becoming healthy. As a result, a relationship with a divine other may not only serve their spiritual needs, but their corporal needs as well. According to one young women, all other strategies are secondary to faith in her recovery from an eating disorder, "…redemption comes in channeling that need to be most 'perfect' into compassion and acceptance – for others as well as myself" (Liu 2007:61). Similar ideas, regarding individuals' innate self-worth from a spiritual perspective, are now being incorporated into highly effective recovery treatment programs for eating disturbances. Treatment

facilities, such as Remuda Ranch, "assist patients into transforming their depressive attributions into more accurate, positive, and freeing attributions by incorporating Biblical wisdom…" into their programs (Wall & Cumella 2006), and are seeing higher recovery rates than the national average (Cumella, Kally & Wall 2007).

In the words of Musick (2000:269), "It is religion's ability to provide meaning and hope for the future, even in the face of current life adversity, that may have such powerful effects on well-being…" For women struggling with binge eating and body dissatisfaction, a personal relationship with God is likely to evoke feelings of optimism and hopefulness which may mute the negative emotions resulting from the struggle with their body size and shape.

With these points in mind, however, there are a few limitations with the present study. First, the data are cross-sectional. However other studies on eating disturbances and depression have used similar methods with unrepresentative samples (Ramrakha et. al 2000). While my results reveal that religious involvement influences eating disturbances, it is impossible to fully understand the causal order of the relationship. However, one strength of the Add Health dataset is its longitudinal design, which lends itself to discovering the direction of causality in future research. Second, the study from which the data were drawn was not designed explicitly to measure eating disturbances. Therefore there are limitations with the eating disturbances measures used in the analysis. However, the measures used in the analysis are similar to those seen on a variety of diagnostic tests designed for use among latency-age and early adolescent children, including ChEAT, a children's version of the EAT-26, and Kids Eating Disorders Survey (KEDS), a 12-item screening questionnaire. Although the terminology is not identical,

the instruments successfully assess the presence or absence of eating disturbances via similar questions, including 'I engage in dieting behavior,' 'I have the impulse to vomit after meals,' 'I want to lose weight now,' and 'I have fasted to lose weight.'

Conclusion

This study extends the literature on the relationship between religion and health by showing that religious involvement reduces the mental health effects of participating in disordered eating behaviors. Future studies might build on the present results by employing longitudinal data, as well as examining the role of religion in the recovery process (i.e., recovery rate and social support). In addition, investigations into how religious institutions serve their members throughout the process of recovery might expand our understanding of the role of religion in the transition to adulthood for young women. Moreover, a mounting body of research suggests that the prevalence of eating disturbances amongst ethnic minorities is growing (Fairburn & Brownell 2002), a final contribution might entail looking at the effects of religion on eating disturbances by race/ethnicity. Future research, along the lines suggested here, would be compelling additions to the growing, and important, body of research on the relationship between religion and health.

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Table 1. Descriptive Statistics of Variables used in the Analyses

	Range	Mean (SD)	%
Outcomes			
Depression	0-3	0.53 (.48)	
Self Esteem	1-5	3.53 (.54)	
Eating Disturbances			
Body Weight Dissatisfaction	0-1		48.21
Binge Eating	0-1		1.06
Extreme Weight Loss Efforts	0-1		20.79
Diagnosis	0-1		3.87
Religion			
Attendance	0-6	2.42 (1.99)	
Private Prayer	0-7	4.28 (2.47)	
Salience	0-3	1.65 (.77)	
Religious Guidance	1-5	3.58 (1.04)	
Demographic Controls			
Non-Hispanic, White	0-1		59.57
Age (in years)	18-27	21.73 (1.79)	
Education (years completed)	6-21	13.42 (1.99)	
Body Mass Index (BMI)	15-60	25.78 (6.50)	
Selection Factors			
Living with Biological Parents	0-1		18.54
Not in a Romantic Relationship	0-1		68.96
Closeness to Partner	1-7	5.82 (.91)	
Life Events	0-1	.16 (.24)	

n=2351

Table 2: the Estimated Effects of Eating Disturbances and Other Covariates on Depression: OLS Regression Coefficients. [a b]

	Model 1	Model 2	Model 3	Model 4
Race (White=1)	-.066**	-.056*	-.057**	-.072***
Age	-.001	-.004	-.004	-.006
Education	-.041***	-.036***	-.037***	-.033***
BMI	.004*	.002	-.002	-.001
Living with Biological Parents		.018	.024	.029
No Romantic Partner		.011	.012	.012
Romantic Connectedness		-.043***	-.046***	-.042***
Stressful Life Events		.518***	.477***	.466***
Body Weight Dissatisfaction			.045+	.043+
Binge Eating			.544***	.548***
Extreme Efforts			.113***	.118***
Diagnosis			.223***	.217***
Attendance				-.021**
Private Prayer				-.007
Salience				.009
Religious Guidance				-.009
Intercept	1.04***	1.25***	1.32***	1.38***
ΔR2	.045	+.069***	+.107***	+.119***

Notes : [a] Figures shown are unstandardized coefficients.
[b] n=2351
+p<.10; *p<.05; **p<.01; ***p<.001

Table 3: The Estimated Effects of Eating Disturbances and Other Covariates on Self Esteem: OLS Regression Coefficients. [a b]

	Model 1	Model 2	Model 3	Model 4
Race (White=1)	-.184***	-.192***	-.183***	-.156***
Age	-.003	-.002	-.002	.001
Education	.017**	-.014*	.014*	.009
BMI	-.008***	.006**	.003	.002
Living with Biological Parents		-.037	-.049+	-.047+
No Romantic Partner		-.022	-.022	-.030
Romantic Connectedness		.028*	.032**	.027*
Stressful Life Events		-.340***	-.369***	-.370***
Body Weight Dissatisfaction			-.180***	-.177***
Binge Eating			-.165+	-.172+
Extreme Efforts			-.032	-.039
Diagnosis			-.253***	-.255***
Attendance				.004
Private Prayer				.015*
Salience				.066**
Religious Guidance				.003
Intercept	3.66***	3.56***	3.40***	3.28***
ΔR2	.036	+.032***	+.062***	+.087***

Notes : [a] Figures shown are unstandardized coefficients.
[b] n=2351
+p<.10; *p<.05; **p<.01; ***p<.001

Table 4. Interaction Effects of Religious Involvement and Eating Disturbances on Depression: Buffering Model [a b]

	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7
Body Weight Dissatisfaction	-.043+	---	---	---	.105*	---	---
Binge Eating	.548***	---	---	1.04***	---	1.08**	---
Extreme Efforts	.118***	.159***	---	---	---	---	---
Diagnosis	.217***	---	.305***	---	---	---	.747***
Attendance	-.021**	-.017**	-.019**	---	---	---	---
Private Prayer	-.007	---	---	-.006	---	---	---
Salience	.009	---	---	---	.028+	---	---
Religious Guidance	-.009	---	---	---	---	-.008	-.003
Eating Disturbance x Religion							
Extreme Efforts x Attendance		-.017+					
Diagnosis x Attendance			-.044+				
Binge Eating x Private Prayer				-.103**			
Body Weight Dissatisfaction x Salience					-.040+		
Binge Eating x Religious Guidance						-.148+	
Diagnosis x Religious Guidance							-.151**
Intercept	1.36***	1.37***	1.38***	1.37***	1.34***	1.38***	1.37***
ΔR2	.164	+.001*	+.001*	+.002**	+.001*	000	+.004***

Notes: [a] Figures shown are unstandardized coefficients.
[b] n=2351
+p<.10; *p<.05; **p<.01; ***p<.001

Table 5. Interaction Effects of Religious Involvement and Eating Disturbances on Self-Esteem: Buffering Model [a b]

	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
Body Weight Dissatisfaction	-.177***	---	---	---	---	---
Binge Eating	-.172+	---	---	---	---	---
Extreme Efforts	-.039+	-.128**	---	-.174**	-.213**	---
Diagnosis	-.255***	---	-.040***	---	---	-.579**
Attendance	.004	-.004	-.000	---	---	---
Private Prayer	.015*	---	---	.009	---	---
Salience	.066**	---	---	---	.042*	---
Religious Guidance	.003	---	---	---	---	-.001
Eating Disturbance x Religion						
Extreme Efforts x Attendance		.037*				
Diagnosis x Attendance			.095**			
Extreme Efforts x Private Prayer				.032**		
Extreme Efforts x Salience					.107**	
Diagnosis x Religious Guidance						.093+
Intercept	3.28***	3.30***	3.27***	3.30***	3.33***	3.28***
ΔR2	.123	+.003***	+.005***	+.004***	+.004***	+.001*

Notes: [a] Figures shown are unstandardized coefficients.
[b] n=2351
+p<.10; *p<.05; **p<.01; ***p<.001