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Holy anorexia: Views of femininity as a potential mediator in the association between religiosity and disordered eating[☆]

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ABSTRACT

Is being more religious a protective factor when it comes to eating disorders, or a risk factor? Past research has provided conflicting answers to this question, and thus, the purpose of the present study was to determine whether the variable association between religiosity and eating disorders can be explained through the mediating variable of views of femininity. Using a sample of 231 individuals, the current study demonstrated that the ways in which individuals view their femininity mediates the association between religiosity and disordered eating. More religious individuals were more likely to hold an essentialized (unexplored or unexamined) view of their own femininity, and this view was associated with an increased risk of disordered eating. However, more religious individuals were also less likely to feel excluded by others on the basis of how they enact their femininity, and that view was associated with a decreased risk of disordered eating. These two indirect effects effectively canceled each other out, leaving no significant overall association between religiosity and eating disorders. Future researchers are encouraged to explore further applications of considering femininity as a multifaceted concept when studying both religion and eating disorders.

Disordered eating is a prevalent problem within Western cultures (Latzer, Azaiza, & Tzischinsky, 2009). Industrialized societies have witnessed a continued rise in disordered eating, with current estimates suggesting upwards of 9% of the total population have struggled with an eating disorder at some point in their life (Hay, Mond, Buttner, & Darby, 2008; Weltzin et al., 2005). Eating disorders are especially common within university populations, particularly in women, with up to 17% suffering from an eating disorder (Prouty, Protinsky, & Canady, 2002). In identifying factors that predict and contribute to the etiology of eating disorders, research has pointed towards social factors, such as media, gender roles, and idealization (Polivy & Herman, 2002). Despite the large body of literature concerning eating disorders, eating disorders remain difficult to treat, necessitating continued exploration of novel avenues, risk factors, and strategies for prevention (Akrawi et al., 2017). In this paper, we suggest that religiosity¹, and in particular the views of femininity fostered within many religions, may potentially

serve both as a risk factor and, perhaps surprisingly, a protective factor against the development of disordered eating. While femininity can be difficult to definitively or concretely define, given its cultural and historical contingency, in the current study we use this term to refer to social characteristics, norms and roles associated with being a woman. Although this definition is useful for the current study, we also acknowledge how feminist, femme, queer and trans scholarship challenges the reductive definition of gender as a mere outgrowth of sex or gender roles.

Religiosity as a risk factor for eating disorders

Voluntary hunger and the strategic abstaining from food are not unique to the modern era. Thirteenth century Europe observed a wave of religiously motivated self-starvation, resulting in an estimated 100 documented cases of “holy anorexia” (Bell, 1985; Espi Forcen, 2013).

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¹ In line with much of the previous research, the current study uses *religiosity* to refer to the strength of an individual's religious feelings or beliefs. Religion is characterized as a social institution that involves organized belief systems, rules, practices, and dogma. Spirituality differs from religiosity in that it does not necessarily involve relationships with a God, and it does not contain the characteristics of religion in a systematic way.

Holy anorexia refers to “anorexia-like symptoms among extremely religious women” (Sipila et al., 2017, p. 407). Connections between religiosity and eating disorders have been made dating back to medieval times (Sipila et al., 2017), prompting historians to speculate on the links between contemporary eating disorders and religiosity (Bell, 1985; Bemporad, 1996; Bynum, 1978).

Indeed, dietary restriction and various limitations imposed upon food and eating are found in all of the world's major religions (Thomas, O'Hara, Tahboub-Schulte, Grey, & Chowdhury, 2018). Fasting saints, for whom abstinence from food symbolized an expression of spirituality and transcendence over material bodies, urges, and desires, provide one of the most prominent connections between religiosity and eating disorders (Castellini et al., 2014). Like sexual abstinence, abstaining from food signals an overcoming of the flesh and a “triumph of the soul” within the teaching of many religions (Nasser, 1997, p. 18). For example, given that gluttony was one of seven cardinal sins in Roman Catholicism, abstaining from food was considered an act of virtue and a sign of spiritual enlightenment (Lyman, 1989). Strategic abstaining from food has historically functioned as a disciplinary tool for both the spirit and the body.

Religiously-based encouragement of control of bodily appetites and abstinence from overindulgence in food historically applied to both men and women; however, the message was perhaps especially communicated to religious women. Within western dualistic thinking, woman is associated with the body, and man with the mind (Bordo, 1993; Oliver, 1994), meaning that women have been portrayed as having to fight particularly hard to overcome their bodily urges. Indeed, within Abrahamic religions, Eve's original sin frames the pursuit of feminine urges (for food, knowledge, sexual appetite), and women's inability to control these urges, as the downfall of all humankind (Bordo, 1993). Such an ideology creates a dichotomy between women who give into their desires (for food or sex), versus those who are able to transcend their bodily urges and abstain.

Religious women have historically demonstrated their piety by fasting. For example, medieval women fasted in order to feast on “spiritual food”, thereby securing (or attempting to secure) their social recognition as holy, pious or even saintly (Bynum, 1978). Further religious justification for fasting was provided by the Puritans, who associated menstruation with the original sin, thus creating the desire for women to fast to the point of amenorrhea (Huline-Dickens, 2000). Catholic nuns throughout history have engaged in controlled eating practices (Davis & Nguyen, 2014; Morgan, Marsden, & Lacey, 2000). More recently, Ghanaian schoolgirls have been documented participating in religiously motivated fasting (Bennett, Sharpe, Freeman, & Carson, 2004). In short, religious fasting has been found to serve as a catalyst for symptoms akin to that of anorexia nervosa across religions and across time, particularly for women (Akgul, Derman, & Kanbur, 2014; Davis & Nguyen, 2014).

Given this historical context, it seems that strong religious beliefs might potentially serve as a risk factor for disordered eating in contemporary society. After all, eating disorders and the religious ascetic share much in common. Both focus on the pursuit of an impossible ideal, passivity, self-sacrifice and self-denial, in addition to guilt and self-punishment centered on ritualistic behaviours (Bordo, 1993; Hoskin, 2017a; Huline-Dickens, 2000). In fact, there is considerable research suggesting that religiosity may be a risk factor for higher rates of disordered eating (Thomas et al., 2018). Compared to the general population, those diagnosed with an eating disorder report higher rates of religiosity (Sykes, Leuser, Melia, & Gross, 1988; Wilbur & Colligan, 1981). Among those diagnosed with an eating disorder, stronger religious beliefs are associated with lower body mass indices (Joughin, Crisp, Halek, & Humphrey, 1992). In clinical anorectic populations, the severity of weight loss is associated with the importance individuals place on their religion (Joughin et al., 1992). These findings have led researchers to speculate that some individuals may utilize their religious belief system to justify or mask disordered eating (Joughin et al.,

1992; Marsden, Karagianni, & Morgan, 2007; Morgan et al., 2000). In particular, behaviours that elicit religiously-motivated guilt may exacerbate underlying eating disorder psychopathologies (Exline & Rose, 2005).²

Religiosity as a potential protective factor for eating disorders

Despite this evidence identifying religiosity as a potential risk factor for eating disorder symptomatology, other research suggests that increased religiosity might at times serve as a protective factor. In general, considerable previous research finds greater levels of religiosity to be associated with more positive mental and physical health, which are associated with reduced eating disorder symptoms (Koenig, 2012; Paloutzian & Park, 2005; Powell, Shahabi, & Thoresen, 2003). More specifically, research has found higher levels of both religiosity (Latzer, Orna, & Gefen, 2007) and spirituality (Boisvert & Harrell, 2012) to be associated with lower rates of eating disorders. Akrawi, Bartrop, Potter, and Touyz (2015) found that having an internalized or intrinsic approach (i.e., internally motivated) to religion was associated with lower levels of eating disorders and body image concerns. Religious practices, such as prayer or meditation, have also proven to be useful coping mechanisms for those experiencing body image related distress (Jacobs-Pilipski, Winzelberg, Wilfley, Bryson, & Taylor, 2005).

Many scholars have commented on the contradictory findings within the literature, such that religiosity has been found to both exacerbate and mitigate symptoms relating to eating disorders (Marsden et al., 2007; Mitchell, Erlander, Pyle, & Fletcher, 1990; Morgan et al., 2000; Rider, Terrell, Sisemore, & Hecht, 2014). For example, while many researchers have found religion to be a relevant contributing factor in the development of eating disorder symptomatology (Akgul et al., 2014; Thomas et al., 2018), others have found religiosity to reduce the same phenomena (Akrawi et al., 2017; Latzer et al., 2007), or to not be a central factor (Sipila et al., 2017). Thus, the previous literature is highly contradictory (Castellini et al., 2014), with heightened religiosity sometimes being associated with more, and sometimes fewer, instances of disordered eating.

Views of femininity as a potential mediator between religiosity and eating disorders

One potential means to resolve this paradox is to include a multifaceted view of femininity as a possible mediating factor between religiosity and eating disorder symptomatology. For believers, religion can convey messages regarding what it means to be properly feminine or to conform to patriarchal feminine norms. Patriarchal femininity refers to prescriptive femininity (e.g., only certain approaches to femininity are desirable or acceptable), that is highly regulated through routine stylization and cultural compulsion (Hoskin & Taylor, 2019; Hoskin, 2019a; Hoskin, 2017a). This notion of a restrictive and oppressive femininity is heavily chronicled within feminist theory and scholarship (Bartky, 2003; Bordo, 1993; Brownmiller, 1985; Friedan, 1963).

Many of the symbols and images of patriarchal femininity, as well as gender and gender roles more broadly, are shaped by religion (Bordo, 1993; Huline-Dickens, 2000). For example, religious views may include viewing women as pure, virginal, and worthy of reverence, with Mary being the prototypical example in the Christian ideology. However, alternate views of femininity are also present, with women at times being viewed as temptresses who lure men away from the path of virtue, such as Eve or Jezebel (Bordo, 1993).

² However, while the possibility that individuals who are predisposed to be highly religious might also be predisposed to be at risk of eating disorders is less explored in previous literature, this inverse relationship between religiosity and disordered deserves consideration.

Thus, religious beliefs can profoundly shape one's approach to femininity. In fact, some theorists believe that religious commitment itself is associated with the acceptance of traditional feminine roles, such as feelings of powerlessness, guilt, passivity, and self-punishment (Bridges & Spilka, 1992). Religion also shares themes with eating disorders, including a focus on self-sacrifice, self-denial, and self-punishment when one has failed in one's quest for an ideal (Bordo, 1993; Huline-Dickens, 2000). Thus, the religious worldview resonates strongly with one of the two key explanations presented for eating disorders, i.e., that the individual's relationship to food and the body is symbolic of a (sometimes fruitless) quest for control and perfection (Miles, 1995). Heightened religiosity may encourage striving for achievement of the feminine (and the religious) ideal by control of bodily urges, and by engagement in self-sacrifice and self-punishment when one is perceived to have erred or sinned.

Thus, traditional views of femininity, fostered by religion, may potentially be a risk factor for the development of eating disorders. Indeed, femininity has been identified as a risk factor in the onset of eating disorders (Cella, Iannaccone, & Cotrufo, 2013; Murray, Boon, & Touyz, 2013), to the extent that Cella et al. (2013) characterize eating disorders as a disease of femininity. Empirically, women with eating disorders have been shown to self-report higher levels of femininity than those without eating disorders (Cella et al., 2013), and self-described feminine women are less satisfied with their physical appearance, as compared to more androgynous women (Cella et al., 2013; Jackson, Sullivan, & Rostker, 1988). By encouraging the adoption of traditional approaches to femininity, such as purity and self-sacrifice, higher levels of religiosity might encourage disordered eating.

However, religion may also promote alternative views of femininity that could prove to be protective against the development of eating disorders. A second key explanation proposed for eating disorders is that they represent a means of obtaining the cultural ideal of bodies as represented in the media (Miles, 1995). There is ample evidence for this view of eating disorders. Guided by idealized images in the media, concerns of body image are delineated across gendered lines, such that men are preoccupied with muscularity and women with slenderness (Murray, Boon, & Touyz, 2013; Murray, Rieger, Karlov, & Touyz, 2013; Rousseau & Eggermont, 2018; Simpson, Kwitowski, Boutte, Gow, & Mazzeo, 2016). The internalization of a thin ideal for women (Weinberger-Litman, Rabin, Fogel, Mensinger, & Litman, 2016) has been shown to contribute to eating disorder symptomatology (Brown & Dittmar, 2005; Dittmar, Halliwell, & Stirling, 2009; Stice, Marti, Rohde, & Shaw, 2011; Thompson & Stice, 2001). The media seems largely to blame, with eating disorders showing a surge in developing countries after the introduction of Western media (Abraham & Birmingham, 2008). Non-Western women who are exposed to Western media and culture soon adopt and internalize feminine beauty ideals and eschew their own (McCarthy, 1990), which can be a risk factor for eating disorders (Bhugra, Mastrogianni, Maharajh, & Harvey, 2003; Gordon, 2000; Homan & Boyatzis, 2010).

However, the adoption of body image ideals espoused by the media is not universal, and research has established that the extent to which an individual internalizes feminine beauty ideals moderates their impact on eating disorder symptomatology (Weinberger-Litman et al., 2016). This is where religion could potentially play a protective role. Western media promotes a "beauty myth" (Wolf, 1990), through which young women are indoctrinated into believing that their identity and worth are rooted primarily in their physical beauty (Bordo, 1993; Brownmiller, 1985). Religion, in contrast, places more emphasis on striving towards spiritual perfection, rather than bodily perfection (Brumberg, 1988; Thomas et al., 2018). Religion might therefore serve as a protective factor, by emphasizing that inner or spiritual beauty is more important than outer or physical beauty. Indeed, the adoption or integration of western feminine beauty ideals has been shown to contribute to unhealthy body images, particularly among those from traditional, religiously conservative families (Furnham & Husain, 1999;

Gordon, 2000). Conversely, then, those who are able to reject the importance of culturally-mandated feminine beauty ideals, perhaps with the aid of their religious beliefs, might be less vulnerable to the adoption of an unhealthy body image, and subsequent disordered eating.

The current study

To summarize, research connecting religiosity to eating disorders is very mixed. Both theoretically and empirically, there are indications that religiosity might be associated with higher, and lower, instances of disordered eating. We propose that views of femininity might potentially serve as a mediator between religiosity and disordered eating that could help to clarify this complexity. However, it is not enough to simply ask respondents to rate their perceived femininity on a single unidimensional scale. In line with the emerging field of Critical Femininities (Hoskin, 2018; 2019a; 2019b), we suggest that femininity can be a complex and multifaceted construct. We cannot simply ask respondents if they *are* feminine; we must also inquire what being feminine *means* to them. Being feminine might include accepting a traditional, unquestioned view of femininity, or it might include self-expression and embracing diverse means of being feminine. It might include an emphasis on what femininity can do for the individual, or it might entail a view of how certain ways of being feminine are essential to achieving one's goals, or to being accepted by others.

The current research seeks to explore whether and how such multifaceted views of femininity might mediate or elucidate the association between religiosity on the one hand, and eating disorders on the other. Our approach in this study is primarily exploratory, given that measurement of a multifaceted view of femininity is new, and that no previous research has examined a mediational model connecting religiosity, femininity, and eating disorders. Our research questions then become:

- What is the overall association between strength of religiosity and eating disorder symptomatology?
- What is the association between religiosity and a multifaceted view of femininity?
- What is the association between views of femininity and eating disorder symptomatology?
- Do views of femininity mediate any association observed between religiosity and eating disorder symptomatology?

Method

Study purpose and procedure

Participants were recruited for an online study about perceptions of gender via online advertisements, flyers, and email Listservs. The study focused on respondents' views of what it meant to be feminine and masculine, and included an initial version of an instrument designed to obtain a multifaceted assessment of femininity (see Hoskin, Blair, Holmberg & Jensen, 2019). It also included a variety of potential predictors of gender perceptions (e.g., demographics, religiosity), as well as potential consequents of gender perceptions (e.g., rape myths, transphobia, eating disorders). The measure of femininity was therefore not specifically designed to assess versions of femininity espoused in the world's major religions, but instead was a more general or widely applicable measure of diverse Western femininities.

All advertisements contained a link which took potential participants to a study splash page, where they could read a brief description of the study. Those who were interested could then click through to a detailed consent form. If they chose to grant consent, they proceeded to complete the study questionnaires at their own pace. Only measures relevant to the current study are described in detail below. Participants then read a debriefing form and were entered into a prize draw for \$100. The study was approved by the University of Utah's Institutional

Table 1
Demographics for all participants (N = 213).

	N	%
Average age in years	27.24	
Gender identity		
Woman	195	91.6%
Man	9	4.2%
Non-binary	9	4.2%
Femininity		
Somewhat feminine	98	46.0%
Moderately feminine	86	40.4%
Very feminine	29	13.6%
Sexual identity		
Lesbian	7	3.3%
Gay	4	1.9%
Queer	26	12.2%
Bisexual	26	12.2%
Straight	148	69.5%
Not listed	2	0.9%
Ethnicity		
White	174	81.7%
Black	2	0.9%
Mixed-race	15	7%
Asian	11	5.2%
Indigenous/aboriginal	1	0.5%
Not listed	10	4.7%
Highest education level		
High school or below	85	40.3%
Associate's degree	32	15.2%
Bachelor's degree	63	29.9%
Higher education	31	14.6%
Annual personal income		
Less than \$9000	92	44.0%
\$10,000 to \$24,999	52	24.9%
\$25,000 to \$49,999	36	17.2%
\$50,000 to \$74,999	21	10.0%
Above \$75,000	8	3.9%
Current religion		
Catholic	11	5.2%
Mormon	38	18.0%
Protestant	3	1.4%
Jewish	5	2.4%
Buddhist	4	1.9%
Spiritual	32	15.2%
Atheist	19	9.0%
Agnostic	22	10.4%
Not religious	64	30.3%
Not listed	13	6.2%

Review Board.

Participants

A total of 731 participants accessed the informed consent document, of which 391 participants completed the survey. The analyses for the current study were restricted to the 213 individuals who described themselves as being at least somewhat feminine (see details below). Full demographics for these participants are shown in Table 1. Participants had an average age of 27.2. They were mostly women (including two trans women), predominantly White and straight. Income and education levels showed a wide range. Roughly half of the sample did not identify as religious or spiritual (i.e., not religious, atheist, or agnostic). The other half of the sample identified as either spiritual (15.2%), an unlisted religion (6.2%) or a specific religion, based on the list of options provided: Latter Day Saints (LDS; 18%), Catholic (5.2%), Jewish (2.4%), Buddhist (1.9%), or Protestant (1.4%). The disproportionate number of participants identifying as members of the LDS faith is an artifact of the researchers being in Utah at the time that the study was conducted.

Measures

Religiosity

Participants completed a 4-point rating scale asking, "To what extent do you consider yourself a religious person?", with the response options 0 = *not at all religious*, 1 = *slightly religious*, 2 = *moderately religious*, and 3 = *very religious*. The sample was not highly religious overall. The modal response was 0 or *not at all religious*, representing approximately half of the sample, with the remaining scores relatively evenly distributed between 1, 2, and 3 responses.

Note that preliminary analyses explored whether there were religiosity differences on any of the demographic variables shown in Table 1, using *t*-tests or one-way ANOVAs on categorical variables, and correlations on continuous variables. The only significant effect was for current religious affiliation, $\chi(27) = 216.45$, $p < .001$. Not surprisingly, the 106 participants who reported some form of current religious affiliation (e.g., Catholic, Jewish, Latter Day Saints, etc.) rated themselves as being significantly more religious ($M = 1.46$, $SD = 1.11$) than the 103 individuals who reported no current religious affiliation (i.e., atheist, agnostic, or not religious; $M = 0.15$, $SD = 0.38$). Note, though, that even those who identified with a religion only averaged between slightly and moderately religious.

Femininity self-report

Participants were asked to rate how feminine they viewed themselves on a 7-point Likert scale ranging from 0 = *not at all feminine* to 6 = *very feminine*.

Femininities measure

A Femininities measure was developed to assess multiple aspects of femininity. Item development was grounded in Femme Theory (Hoskin, 2017a). Instead of viewing femininity as a singular construct, Femme Theory suggests that there is more than one way of being feminine or expressing femininity, and that femininity is complex and multifaceted. In creating the scale, the authors sought to capture these multiple aspects of femininity. Items were generated by authors Hoskin and Blair, in part by analyzing open-ended responses to questions regarding expressions of femininity (e.g. what does femme/femininity mean to you?) from an earlier study on Femme identities (Blair & Hoskin, 2015; 2016). The scale was not designed with an a priori factor structure but, rather, explored emerging structures. The 24 items generated were each answered on a 5-point Likert scale ranging from *strongly disagree* to *strongly agree*. Additionally, participants were presented with a *not applicable* option for each item, which was scored as missing data.

Because a number of the scale items asked respondents to elaborate on what being feminine meant to them personally, the survey software was initially set to present the Femininities items only to those who scored 1 or greater on the femininity self-report item (i.e., all those who did not select the *not at all feminine* response option). This selection left a sample of 327 respondents who initially completed the Femininities measure. However, preliminary analyses revealed that remaining individuals who scored at or below the midpoint (i.e., 1, 2, 3, or 4) on the femininity self-report chose the *not applicable* option at high rates for items on the Femininities scale (i.e., missing values rates ranged from 22% to 39% missing data per item for these respondents). In contrast, those who scored above the midpoint on the femininity self-report item (i.e., described themselves as *somewhat*, *moderately*, or *very feminine*) responded to the items Femininities items at much higher rates (i.e., missing value rates ranged from 0% to 11% per item). Therefore, all remaining analyses were restricted only to the 213 individuals scoring above the midpoint on the femininity self-report.

An exploratory principal components analysis with varimax rotation was run on the original 24 items of the Femininities scale. Kaiser's criterion and the scree plot suggested the presence of seven factors. Two items showed low factor loadings (< 0.35) across all factors, and were eliminated from the scale. The remaining 22 items showed good factor

Table 2
Correlation matrix for all study variables.

	Instrumental	Excluded	Flexible	Paradoxical	For others	Essentialized	Eating disorder symptoms
Religiosity	.15*	-.19**	-.11	.08	.11	.26***	-.01
Instrumental	–	.03	.04	.00	.14*	.09*	.08
Excluded	...	–	.08	-.04	.10	-.26***	.17*
Flexible	...	...	–	.04	-.06	-.14*	.08
Paradoxical	...	...	...	–	.05	.18*	.16*
For others	...	...	...	...	–	.15*	.14*
Essentialized	...	...	...	...	...	–	.10

* $p < .05$.

** $p < .01$.

*** $p < .001$.

loadings (> 0.45) with no substantial cross-loadings. The seven factors collectively accounted for 61% of the variability in the data. An additional analysis with an oblique rotation revealed no substantial correlations between factors (all $r_s < 0.19$), suggesting relative independence of factors. One 3-item factor, labelled Feminine Aesthetic, showed a very low Cronbach's alpha ($\alpha = 0.22$), and was therefore deemed insufficiently reliable to use in its present form. Some of the other factors also show relatively low Cronbach's alphas and will benefit from further scale refinement; still, preliminary results are interesting. See Hoskin, Blair, Holmberg & Jenson (2019) for more information about the scale development, and the full text of all items. After reverse-coding as appropriate, scores for each factor below were obtained by averaging across the relevant items.

- **Instrumental Femininity:** (4 items; $\alpha = 0.52$) Higher scores indicate understanding femininity as a tool, having value and utility, to be used for gain or progress. Sample items are “Others value me for my femininity” and “I know how to use femininity to get what I want and need.”
- **Excluded:** (4 items, $\alpha = 0.64$) Higher scores indicate feeling excluded on the basis of one's femininity, or perceived lack of femininity. Sample items are “I am excluded from social events because I am not feminine enough” and “I feel out of place among a group of feminine women.”
- **Flexible Femininity:** (2 items; $\alpha = 0.71$) Higher scores indicate greater acceptance of diverse expressions of femininity. Items are “Femininity can be expressed in many different ways” and “Each person's femininity is as unique as they are.”
- **Paradoxical Femininity:** (2 items, $\alpha = 0.80$) Higher scores indicate viewing positive attributes as existing despite one's femininity. Items are “Despite my femininity, I am intelligent” and “Despite my femininity, I am strong.”
- **For Others:** (4 items, $\alpha = 0.74$) Higher scores indicate that femininity is perceived as a performance or an obligation, participated in for the benefit/pleasure of others. Sample items are “It is important to me to behave and appear femininely in order to attract male partners or please/attract my partner” and “I make a conscious effort to wear outfits I know my partner likes”.
- **Essentialized Femininity:** (3 items; $\alpha = 0.54$) Higher scores indicate conflation of being born a female and being feminine (i.e. biological determinism). A sample item is “I was born female, therefore I am feminine” and “I have never put much thought into my femininity”.

Eating disorders

Eating disorders was measured using the Eating Disorders Examination Questionnaire (EDE-Q; Fairburn & Bèglin, 1994). The EDE-Q is a widely-used measure of eating disorder attitudes and behaviours in both community and clinical populations. The EDE-Q contains four subscales: Restraint (5 items), Eating Concern (5 items), Shape Concern (8 items), and Weight Concern (5 items). All items are

presented on 7-point Likert scales, with response options ranging from 0 to 6. As Luce, Crowther, and Pole (2008) recommend, each subscale's score was calculated by averaging the appropriate items. Then, a global score was calculated by averaging the scores from each subscale. Higher scores indicated the presence of more symptoms consistent with the presence of eating disorders. Each subscale of the EDE-Q showed moderate to excellent reliability in the current study (Restraint $\alpha = 0.82$; Eating Concern $\alpha = 0.76$; Shape Concern $\alpha = 0.91$; Weight Concern $\alpha = 0.83$). The global EDE-Q measure showed good reliability ($\alpha = 0.89$) in the current study, and has shown moderate to excellent reliability in past research (e.g., Luce & Crowther, 1999).

Results

Analysis strategy

Table 2 shows bivariate correlations between all study variables. All research questions were addressed by using Hayes' (2013) PROCESS macro to run a multiple mediation analysis, with religiosity as the predictor variable, eating disorders symptoms as the outcome variable, and the six Femininities subscales as the mediators. The macro first runs six separate regression analyses, predicting each Femininities subscale with the religiosity measure (see left-hand side of Fig. 1; note coefficients displayed are b s, i.e., unstandardized regression coefficients). It then runs a multiple regression model, predicting the eating disorders variable with the six Femininities subscales (see right-hand side of Fig. 1).

The macro then uses bootstrapping to calculate indirect effects to test for mediation. Many random datasets (here, 5000) of the same size as the original dataset are generated by sampling with replacement from the original dataset. The mediation analysis is then run on each of these 5000 datasets, indirect effects are calculated, and 95% confidence intervals are created. If the confidence intervals are consistently positive, or consistently negative, it indicates significant mediation via that variable. On the other hand, if the confidence intervals cross zero (i.e., the indirect effects are sometimes positive, sometimes negative, and sometimes zero), then there is no significant mediation via that variable. See Table 3 for these indirect effects and confidence intervals.

RQ1: religiosity and eating disorders

Overall, not taking femininities into account, there was no significant association between religiosity and eating disorders (see Total Effect in Table 3, and initial effect outside parentheses in Fig. 1). More religious individuals were neither more nor less likely to display symptoms of eating disorders, compared to less religious individuals.

RQ2: religiosity and femininities

The paths on the left-hand side of Fig. 1 showing the associations between religiosity and various forms or versions of femininity. As can be

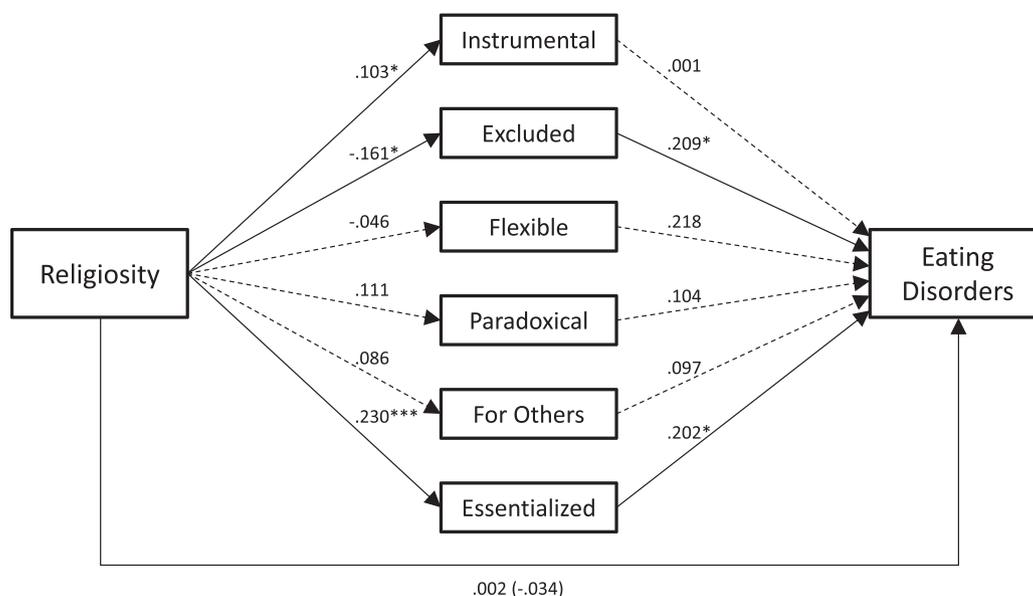


Fig. 1. Multiple mediation analyses, with femininities scores mediating the association between religiosity and eating disorder symptomatology. Dotted lines indicate nonsignificant associations.

* $p < .05$, ** $p < .01$, *** $p < .001$.

Table 3

Direct, indirect, and total effects for mediational model.

	<i>b</i>	SE <i>b</i>	LLCI	ULCI
Total effect	0.002	0.086	-0.167	-0.170
Residual direct effect	-0.038	0.087	-0.209	0.134
Indirect effects:				
Overall indirect effect	0.040	0.041	-0.043	0.116
Instrumental	0.000	0.016	-0.034	0.034
Excluded	-0.034	0.023	-0.098	-0.003
Flexible	-0.010	0.013	-0.050	0.004
Paradoxical	0.012	0.012	-0.004	0.050
For others	0.008	0.012	-0.005	0.052
Essentialized	0.047	0.026	0.006	0.108

Notes. *b*, unstandardized regression coefficient; SE *b*, standard error of regression coefficient; LLCI, lower limit of 95% confidence interval; ULCI, upper limit of 95% confidence interval. Significant effects are bolded.

seen in Fig. 1, being more religious was associated with holding more Instrumental and more Essentialized views of femininity, and with perceiving oneself to be less likely to be Excluded by others based on one's particular form of femininity. Compared to less religious individuals, those who were more religious were more likely to feel that their femininity was valued by others, and to feel that they were included/not excluded by others based on their specific form of femininity. However, compared to less religious individuals, more religious individuals also tended to have a relatively essentialized (i.e., unexamined or unexplored) vision of what being feminine personally means to them.

RQ3: femininities and eating disorders

The paths on the right-hand side of Fig. 1 show the associations between the various forms or versions of femininity and self-reported eating disorder symptomatology. As can be seen in Fig. 1, displaying more self-reported symptoms of disordered eating was associated with holding a more Essentialized (unexplored/unexamined) view of one's femininity, and with feeling Excluded by others based on one's particular type of femininity.

RQ4: mediation

Our final research question asked whether different views of femininity might potentially mediate or help explain any association between religiosity and disordered eating. Recall that there was no overall association between religiosity and symptoms of eating disorders (see Total Effect in Table 3). Likewise, there was no residual direct effect, i.e., after taking measures of femininity into account, there was still no significant association between religiosity and eating disorders (see Residual Direct Effect in Table 3, and figure inside parentheses in Fig. 1). Furthermore, there was no overall indirect effect: taking the Femininities subscales into consideration as a group, pooling across them, there was no indication of overall mediation. At first glance, then, there appears to be no mediating effect of views of femininity.

However, closer inspection of the individual indirect effects shows that two of the Femininities scales served as significant mediators between religiosity and eating disorders. First, Essentialized views of femininity showed a positive indirect effect. Those who were more religious held more essentialized (unexamined/unexplored) views of what it means to them to be feminine, and those essentialized views in turn predicted higher endorsement of eating disorder symptomatology. In contrast, feeling Excluded on the basis of one's femininity had a negative indirect effect. Those who were more religious reported being less likely to feel excluded by others on the basis of their perceived femininity, lack of femininity, or particular brand of femininity. Their version of femininity tended to be readily accepted by others; this acceptance or lack of exclusion, in turn, was associated with displaying fewer eating disorder symptoms. These two opposing indirect effects canceled each other out, leaving no significant overall association between religiosity and eating disorders.

Discussion

The purpose of this article was to address a paradox in the literature, such that being more religious is sometimes associated with more, and sometimes fewer, experiences of disordered eating. Our baseline results, without taking views of femininity into account, did nothing to resolve this issue, as we found no overall association whatsoever between religiosity and eating disorder symptomatology.

As we had suspected, however, taking a multifaceted view of

femininity into account went some way towards resolving the paradox in the literature. On the one hand, being more religious seemed to be associated with espousing a relatively socially acceptable vision of femininity. Religious individuals felt that others valued them for their femininity, and that they were accepted/not rejected by others because of the specific way they enacted their femininity. There was a protective function here, because those who felt excluded by others because of their brand of femininity (e.g., endorsing items such as “I feel out of place among a group of feminine women”) were more likely to show symptoms of eating disorders.

Perhaps those who feel excluded believe that they are not performing femininity properly or are failing to meet societal expectations surrounding feminine norms. They report feeling out of place among feminine women, thinking other women believe they do not act femininely enough, or being excluded from opportunities or social events because of their femininity, or lack thereof. In other words, these participants are not living up to the ideal, conveyed by society and especially the mass media, of what it means to be feminine. They may be somewhat androgynous or masculine in their embodiment, appearance, or gender expression; or, they might identify as gender diverse in some capacity. Regardless of their specific circumstances, for these participants the social world is used as a metric for gauging their femininity and there is a shared belief that they are excluded by others because they are not doing femininity “right.”

Acceptable femininity is often very narrowly defined – thin, white, heterosexual, able-bodied, cisgender, etc. (Deliovsky, 2008; Hoskin 2017a; 2017b). Those who do not meet normative feminine standards may feel rejected or excluded by others, and may consequently strive for acceptance by pursuing the thin ideal, buying into the cultural messages that certain standards must be adhered to in the pursuit of femininity, with the emphasis on appearance, beauty, and being slender being a primary message (Hesse-Biber, 2006; Wolf, 1990). Consequently, it is not difficult to see how feelings of exclusion based on one's femininity could result in more eating disorder symptoms.

Individuals within our sample who were more religious were less likely to report feeling excluded by others based on their femininity. Consequently, they may not feel that they must strive as hard for acceptance. Even if they are pursuing a feminine ideal, it is likely to be a slightly different ideal. For example, with religion's emphasis on spiritual rather than bodily perfection, religion may protect against media messages that promote the route to feminine perfection as being via pursuit of a particular body type or aesthetic. Religion may instead emphasize that women should be chaste, modest, pure, and not tempt men by flaunting their beauty, and especially their sexuality. This framing of womanhood and femininity likely comes with an additional set of concerns (Bordo, 1993), but not the specific type that encourages eating disorders. Religious women may feel more accepted by others when they *act* appropriately feminine (modest, polite, unassuming) or are appropriately feminine in their grooming and presentation (modest but ladylike attire), rather than when their body type meets the cultural ideal. In this way, religion may serve to protect or shield adherents from the media messages focusing on feminine beauty that may serve as a risk factor for eating disorders.

However, more religious women are also likely to hold an essentialized view of femininity, endorsing items stating that they have never really thought about their femininity, that they have simply always been feminine, and that they were born female and therefore must be feminine. If someone has not considered or put thought into their own femininity, it seems likely that they have uncritically internalized whichever societal norm has been assigned to them (e.g., they have bought into a more traditional or patriarchal view of femininity). In other words, an essentialized view of femininity suggests the internalization of patriarchal feminine norms in way that maintains these norms as natural, hegemonic, and unquestioned (Hoskin, 2019a). This view can contain concepts of women and, by extension, proper femininity as being subservient and passive, and needing to please others

(Hoskin 2017a; 2019b). It can also include elements of self-sacrifice, and an emphasis on the need to control dangerous bodily urges (Bordo, 1993; Brownmiller, 1985). All of these views of femininity are likely to be associated with an increased risk of disordered eating.

The obverse of an essentialized view of femininity would be a self-actualized femininity, in which individuals think carefully (or critically) about what femininity is, what it means to them personally, and how they can enact femininity in their own lives in a way that is true to their own values and goals. In other words, rather than following the patriarchal feminine script that is assigned by virtue of being a woman, those with a self-actualized femininity write their own feminine scripts (Blair & Hoskin, 2015; 2016). If someone goes through such a thought process, they may be less likely to buy into dominant sociocultural messages about what it means to be feminine, whether those messages are transmitted via the media or via religious texts, teaching and sermons. Therapists may want to use this information, possibly encouraging their clients to carefully examine what being feminine means to them personally, with the goal of cultivating a more flexible femininity (or masculinity!) that is reflective of their own individuality. This approach has to be taken with care, however – if someone has been inculcated for years with messages from society or from religion regarding what it means to be feminine, as many are, they may have internalized those views, making it difficult to take a fully autonomous perspective.

Thus, the current study suggests views of femininity might provide one possible explanation as to why religion might sometimes be associated with more, and sometimes with less, problems surrounding disordered eating. In short, religious individuals are less likely to be excluded on the basis of their femininity, which may serve as a protective factor, but they are also more likely to hold essentialized, or personally unexamined, views of femininity, which is a risk factor. Of course, additional research is needed to further explore these ideas. The measure of diverse femininities was exploratory, still needs further refinement, and was not specifically designed to assess views of femininity fostered in a religious context. Even clearer results might be found with a measure that explicitly assesses views of women commonly held in religions (e.g., themes of sacrifice and control; of spiritual rather than bodily perfection; of the need to resist sexual presentation and temptation; of emphasis on chaste, pure and wholesome conduct).

Even clearer results might also have been obtained if the measure of femininity had been designed to align directly with cultural messages (e.g., the beauty myth; the thin ideal) that can foster eating disorders. For example, the For Others scale intuitively seems likely to be associated with a higher risk of eating disorders, because it focuses on enacting femininity to please others rather than oneself. However, the items in this subscale happened to focus on certain grooming or aesthetic choices (e.g., wearing dresses, wearing makeup, wearing particular outfits); if the focus instead had been on attainment of certain bodily ideals to please others, the association with eating disorders might well have been stronger.

Still, the potential fruitfulness of this line of inquiry is driven home by the fact that interesting and clear results, with two countervailing mediational paths from religion to eating disorders that cancel each other out, were found even with a measure of femininity not specifically designed for the purpose. These findings also emphasize the importance of taking a varied and multifaceted view of what it means to be feminine. There may be many more areas where we will get similar results, in which different aspects of femininity may have opposing effects.

Strengths and limitations

As noted above, the fact that the measure of femininities is new, and was not explicitly designed to explore views of femininity promulgated in religions, or specifically relevant to eating disorders, is both a strength and a weakness. More targeted measures might obtain even stronger effects, but the fact that clear effects are found even with a

general, non-specific measure suggests that this is a promising avenue for further research.

By limiting our responses only to those who considered themselves at the midpoint or above on a general rating of femininity, the sample ended up being predominantly cisgender women. However, given the topic matter, the sample seems appropriate: only those who see themselves as being at least somewhat feminine are likely to internalize their religion's message of what it means to be feminine, and apply that message to their own personal eating habits. Further work would be useful to explore whether religion's views of femininity encourage men to police women's eating behaviours. Also, a measure that more specifically taps into religious themes of control, self-sacrifice, and overcoming bodily urges would be worth exploring. Although more strongly aimed at women, such messages apply to men as well, and might potentially predict disordered eating in both men and women. Furthermore, given that disordered eating has been deemed a "feminine disease" (Cella et al., 2013), future research should explore how different types of femininity predict disordered eating across a diverse sample of gender/sex identities, including cisgender men and women, transgender men and women, as well as individuals who identify as nonbinary.

The sample was also predominantly North American, White, cisgender, and heterosexual. More work should be done to explore the role of religion in eating disorders in other cultures, or in queer communities. Still, the sample does have some reasonable variability in terms of education, income, etc. It is not solely a privileged student sample, which is a strength.

As noted briefly in the Method section, the sample was not highly religious, being split roughly evenly between those who do versus do not see themselves as religious at all. We did not set out purposefully to get a religious sample; we simply took the mix of individuals as they came into the study. On the one hand, that is a strength. It shows that the effects of religiosity are not only apparent in a small minority of highly religious individuals but are also apparent in a more diverse sample. On the other hand, it would be useful to follow up this study in a more religious sample who had received strong messages about patriarchal femininity throughout their lives; we speculate the effects would be even stronger.

Our analyses focused only on how religious individuals said they were, not on the specific form of religion they espoused. In some ways, this general approach is a strength. We believe that messages about the importance of control of bodily urges, and of emphasis on spiritual rather than bodily perfection (Brumberg, 1988), apply to a wide variety of religions, and thus the theoretical and empirical points we are making may well apply across religions. Still, a more nuanced approach may prove fruitful in future, examining the specific messages of femininity communicated by various religions, and designing measures to assess those specific messages. Additionally, the measurement of religiosity was limited. Thus, future research should not only examine specific religions, but also use a more dimensional measurement of religion. This may be particularly relevant in assessing the results of the current study, as the breakdown of religions within the sample was not representative of the general North American population. In particular, due to collecting data in the state of Utah, a higher than average number of participants indicated their religious affiliation as being with the Church of Jesus Christ of Latter Day Saint (LDS); roughly 18% compared to the national average of 2% in the United States.

Conclusion

Be it through the messages transmitted via mass media or religion, women have a long and continued history of being subjected to self-regulation surrounding norms of femininity (Deliovsky, 2008). Yet, as Thompson and Heinberg (1999) argue, the mere rejection of cultural messages is insufficient to tackle the problem of eating disorders and women's body image. Rather, and in line with the emergent field of

Critical Femininities, they suggest "positive redefinitions of femininity as multifaceted and self-accepting" as a possible avenue for intervention (Thompson & Heinberg, 1999, p. 346). While much more work remains, we believe that we have identified a potentially fruitful avenue for further investigation that is in line with Thompson and Heinberg's (1999) suggestion. Understanding the views of femininity espoused by religions might go some ways towards resolving the paradox regarding the association between religiosity and eating disorders. More generally, we believe that exploring femininity as a complex, multifaceted construct holds potential to provide theoretical clarity and precision that may have been lacking in past research.

Declaration competing of interest

None.

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