

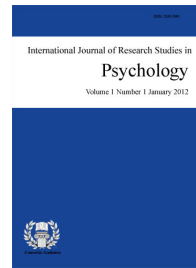
The effects of sexual and religious orientations on memory for weight-related stimuli

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Abstract

Women are often socialized to adhere to an ideal of thinness, although recent research has shown that sexual orientation and religious beliefs may moderate body dissatisfaction and disordered eating symptoms. The present study examined the effects of religious and sexual orientations on memory for weight-related stimuli. The main research question was whether sexual and religious orientations would affect the recall of pictures, whether they are weight-related, neutral, or intrusions. Young college women (aged 18-30), of different sexual and religious orientations, participated in an incidental memory test consisting of weight-related and neutral pictures shown on a computer screen. Participants were also asked to complete a series of questionnaires and scales. Results indicated that religious, heterosexual participants recalled more intrusions than non-religious, heterosexual participants. Furthermore, religious orientation affected the number of weight-related intrusions recalled.

Keywords: weight consciousness; memory; religious orientation; sexual orientation

The effects of sexual and religious orientations on memory for weight-related stimuli

1. Introduction

Women in many cultures, regardless of sexual orientation, ethnicity, religion, or class, are often socialized to adhere to a rigid common ideal of thinness, emphasized in mainstream media. This socialization is believed to be a risk factor in the development of eating disorder pathology (Garner, Olmsted, Bohr, & Garfinkel, 1982). However, how this risk varies according to sexual and religious orientations is an under-examined topic in the psychological literature. The current research extends beyond past studies by examining the effect of sexual and religious orientations on weight consciousness and memory among college women.

Past research on eating disturbances among lesbians yields interesting yet mixed results, as a literature review by Heffernan (1994) was unable to come to a conclusion on the findings pertaining to lesbian's risk for eating disorders. For example, Gettelman and Thompson (1993) found that when heterosexual men and women were compared to homosexual men and women, gay men and heterosexual women evidenced the most body dissatisfaction. A study by Brand, Rothblum, and Solomon found similar results, as heterosexual women and homosexual men were more preoccupied with their weight, yet women despite their sexual orientations experienced more dissatisfaction with their bodies compared to men (1992). However, Beren, Hayden, Wilfley, and Grilo (1996) found that while gay men scored higher on body dissatisfaction measures than straight men, lesbian women did not differ from heterosexual women on these measures. Therefore, they found that lesbianism was not a protective factor against women's vulnerability to eating disorders. Additionally, a study by Share and Mintz (2002) found that lesbians had significantly higher levels of body esteem in comparison to heterosexual women, but there was no difference between women on measures of eating disorder symptoms.

Another study concluded that homosexual women showed the same emphasis on dieting and body consciousness as heterosexual women (Heffernan, 1999). On the other hand, a study by Herzog, Newman, Yeh, and Warshaw (1992) found that although they were heavier, homosexual women expressed more satisfaction with their bodies compared to heterosexual women. Furthermore, homosexual women were less concerned with their appearance and weight than heterosexual women, suggesting that homosexual women may have standards of weight different from the common drive for thinness among women. Furthermore, gender and sexual orientation may also impact one's vulnerability to disordered eating and body dissatisfaction. For instance, a study by Siever (1994) found that lesbians showed the least concern about their physical attractiveness, while heterosexual women and gay men evidenced a higher concern for their appearance, making them more prone to body dissatisfaction. Lesbians were also less likely to demonstrate disordered eating behaviors compared to heterosexual women.

Another study by Matthews-Ewald, Zullig, and Ward (2014) found that non-heterosexual men were more likely to report disordered eating behaviors and eating disorder diagnoses than heterosexual men, while homosexual women did not seem to be at a higher risk for eating disordered behavior. The only statistically significant difference between women was that homosexual women were more likely to report dieting as a means to lose weight. A study by Strong, Williamson, Netemeyer, and Geer (2000) found similar results, as lesbians were least concerned with their physical appearance compared to heterosexual men/women and gay men. While heterosexual men reported the fewest eating disorder symptoms, heterosexual women reported the highest level of symptoms, such as obsession with weight or loss of control around food.

Lakkis, Ricciardelli, and Williams (1999) also support the research by Strong et al. (2000), as gay men indicated higher levels of body dissatisfaction and food consumption restraint compared to heterosexual men. Lesbians, compared to heterosexual women, scored lower on all measures of disordered eating, consumption restraint, drive for thinness, and body dissatisfaction. This research was based on the "femininity hypothesis," in

which those who employ more negative “feminine” traits, such as dependence and passivity, tend to display more disordered eating behaviors (Boskind-Lodahl, 1976; Paxton & Sculthorpe, 1991). Based on this hypothesis, those who identify as feminine and take on these more negative feminine characteristics may be more prone to unhealthy dieting as a means to improve their self-esteem. Furthermore, a study by Meyer, Blissett, and Oldfield (2001) found that participants who identified more as feminine were more likely to exhibit abnormal eating and dieting behaviors, which was most common among women and homosexual men. Based on research by Meyer et al. (2001) and Lakkis et al. (1999), the more feminine one is, the higher one’s risk of developing an eating disorder.

Bulimia nervosa and bulimic symptoms have also been studied individually in regards to sexual orientations. A longitudinal study by Wichstrøm (2006) tested a group of high-school students by having them complete self-reports regarding same-sex sexual experiences and degree of sexual attraction toward the same sex and bulimic symptoms. They were then retested five years later. Both male and female participants who had same-sex sexual experiences and same sex attraction increased the likelihood of bulimic symptoms by the second testing session five years later.

College women, in particular, are an especially important age group to consider when studying eating disturbances. One study by Heron, Scott, Sliwinski, and Smyth (2014) found that when women reported higher negative affect, they displayed more disordered eating behaviors during their most recent eating episodes. Another study suggests that college women who are overweight or obese tend to receive more negative comments regarding their weight compared to normal weight or underweight women, which in turn was related to more eating concerns and restrained eating (Herbozo, Menzel, & Thompson, 2013). These studies imply that weight consciousness can affect one’s eating habits as well as cognitions, such as mood and judgment, suggesting that the investigation between weight, eating disturbances, and cognition are important, especially among college women.

With regards to age, sexual orientation, and disordered eating, a study by Moore and Keel (2003) found that age did not influence sexual orientation and eating disorder symptoms. They did find a main effect for age, however, as older women were more dissatisfied with their bodies and more likely to use exercise as a method of weight control. Researchers also did not find many differences between heterosexual and homosexual women on body dissatisfaction, weight concerns, and bulimia. However, they did find that heterosexual women had higher drives for thinness and use of exercise for weight control compared to homosexual women.

Another possible determinant of weight-conscious thinking, or preoccupation with one’s weight and body image, may be attributed to religious orientation, which was studied by Smith, Richards, and Maglio (2004). By measuring participants’ religious orientation, they were able to determine if a participants’ religious orientation was either extrinsic or intrinsic. People with an extrinsic orientation were more likely to be religious for external, social status and acceptance reasons, whereas those with an intrinsic orientation were more likely to be religious for internalized, personal reasons. Researchers found a significant positive relationship between eating disorder symptoms and extrinsic religiosity. A similar study found that eating disorder patients scored higher on extrinsic religiousness and lower on intrinsic religiousness compared to healthy controls, whereas controls scored higher on intrinsic religiosity (Castellini et al., 2014). Based on this research, extrinsic religiosity may hinder mental health by promoting abnormal eating behaviors, while intrinsic religiousness may provide a buffering effect from negative life stressors. Thus, these results suggest that religious orientation may play a role in weight consciousness and subsequent cognition.

To test this idea of intrinsic religiousness providing a buffer against mental health issues, Smith, Hardman, Richards, and Fischer (2003) studied women with eating disorders and sought to understand whether intrinsic religiousness may predict outcomes concerning in-patient treatment. Results indicated that intrinsic religiosity did not help reduce eating disorder symptoms among these women during treatment. On the other hand, one study found that women who had strong religious and spiritual beliefs and practices utilized their beliefs to their

advantage, as it helped them cope with body image distress (Jacobs-Pilipski, Winzelberg, Wilfley, Bryson, & Taylor, 2005). Participants who did not have these strong beliefs tended to employ distraction tactics, such as watching television or talking to friends, to cope with their body dissatisfaction. Another study by Zhang (2013) based in Asia found that college women who identify as religious or spiritual were less likely than non-religious women to use drastic weight-loss methods, like drug use or crash dieting. Therefore, spirituality may offer a protective buffering effect against disordered eating and negative body image, as religious beliefs seemed to have a positive impact on women's body images.

Research on memory in regard to orientations is limited, but there have been studies that investigate the relation of memory and memory biases to eating disorder symptoms. One study by Jiang and Vartanian (2012) examined how attention and memory biases affected the recall of body-related images among restrained eaters by tracking participants' eye gaze during a visual search task. Results indicated that both groups, restrained and unrestrained eaters, allocated more attention to the body-related images, but restrained eaters recognized more body-related images than the control group regardless of attention levels.

In another study by Li, Jackson, and Chen (2011), participants categorized by high and low weight dissatisfaction were presented with a dichotic listening task. While ignoring weight-related and neutral distractors, participants repeated neutral passages as well as attended to visual stimuli. They were then asked to complete a recognition memory task, in which only half of the stimuli were actually presented as distractors. Results showed that weight dissatisfied women made more errors repeating aloud passages while presented with distractors compared to the control group. Furthermore, weight dissatisfied women tended to falsely recognize novel "fat" words and claim they were familiar during the recognition task. Therefore, auditory processes can affect processing biases relating to weight and body concerns.

Additionally, a study by Sebastian, Williamson, and Blouin (1996) sought to understand memory bias for fatness-related words among participants diagnosed with eating disorders. Researchers found that those with eating disorders were more likely to recall "fat" words more often than the control groups. Interestingly, participants who were highly preoccupied with their weight did not show a memory bias, though they were equated with the eating-disorder group on measures of depression and weight preoccupation, suggesting that the eating disorder itself made a difference in memory bias.

In addition to memory bias, researchers have examined the effect of restrained eating and memory specificity, such as in the study by Ball, Singer, Kemps, and Tiggemann (2010). Researchers presented participants, female college students, with cue-words relating to body image and dieting while participants recalled related autobiographical memories. Based on the dieting sub-scale of the Restraint Scale, which measures dietary restraint, those with higher scores recalled fewer autobiographical memories. Because memory retrieval is a high-level cognitive process, it is possible that restrained eating may affect such executive functions. However, it is not clear if memory in general is affected by restrained eating habits or just specific memories related to certain cues. Furthermore, Treat, Viken, Kruschke, and McFall (2010) investigated how information processing occurred among women, specifically in their attention, memory, and covariation-detection processes in eating disorder symptoms. Covariation-detection was determined by participants making judgments about other women's body sizes and affects through photographs. Women who were categorized as high-symptom tended to show more attention to body size as opposed to affect. In addition, high-symptom women had better memory for body size and worse memory for affect.

1.1 The present study

Sexual orientation and religious orientation have been studied separately, as past studies have failed to examine how they operate together to affect weight consciousness and memory. The present research extends beyond previous studies in that it combines all of these factors in a systematic approach. Since research has shown that women are more likely to have internalized the "drive for thinness" and be exposed to disordered

eating on college campuses (Fairburn & Beglin, 1990), this study is unique considering that the participants are all young college students attending a women's college. This study follows up from previous research based on weight consciousness, circadian arousal, depression, and memory by Chung, Sharifi, and Harris (2011), as it uses the same pictures in the picture task. Furthermore, this study also stems from previous research by Chung and Ryan (2013), which looked at the effect of sexual orientation on weight consciousness and memory. The present study addresses unanswered questions within this field of study, such as participants' backgrounds, ethnicities, sexual orientations, and religious orientations through the use of a unique combination of questionnaires and tasks.

1.2 Hypotheses

Based on past studies, we predicted that participants who were weight conscious would show a higher rate of memory for weight-related stimuli. We also hypothesized that participants who were more weight conscious and extrinsically religious would be more likely to remember weight-related stimuli, and that LGBTQ (Lesbian, Gay, Bisexual, Transgender, or Queer) women would be less weight conscious than heterosexual women. Additionally, we explored how depression interacted with participants of differing religious and sexual orientations, and whether these orientations would affect memory.

2. Methods

2.1 Participants

Ninety two Mills College female students aged 18-30 years old were recruited to participate in person during the Spring 2014, Fall 2014, and Spring 2015 semesters. Thirty participants were Caucasian, seven were African-American, 10 were Hispanic, 15 were Asian, and 30 were of other or mixed ethnicities. Although Asian participants reported significantly lower mean weight compared to all other ethnic groups (all t 's > 2.5 , p 's $< .05$), overall results did not differ among ethnicities. Participants received class credit or a \$10 gift card for voluntary participation and were recruited through email and class announcements. This included several psychology classes and the college's daily student news email. Each testing session took 45 to 60 minutes to complete. We categorized participants into groups depending on their religiosity and sexual orientation (religious versus non-religious, and heterosexual versus LGBTQ), which can be seen in Table 1. Twenty participants identified as heterosexual and non-religious (mean age = 20.45, range = 18 to 25) and twenty participants identified as heterosexual and religious (mean age = 18.85, range = 18 to 27). Twenty-two were LGBTQ, non-religious (mean age = 20.05, range = 18-28), and twenty were LGBTQ, religious (mean age = 19.85, range = 18-24). Three participants were excluded from analyses, as one did not specify her sexual orientation and the other two were above the age requirement of 18-30.

Table 1

Demographics & Cognitive Measures: Means and Standard Deviations

Group	Age	Years of Education	BMI	BDI	EAT	LNS	FOF
Heterosexual	20.45	14.12	23.70	8.65	5.95	10.90	46.45
Non-Religious ($n = 20$)	Range: 18-25	(1.57)	(4.21)	(8.97)	(5.78)	(1.80)	(7.18)
Heterosexual	18.85	12.95	22.41	10.80	6.30	10.70	46.55
Religious/Spiritual ($n = 20$)	Range: 18-27	(1.63)	(3.25)	(8.00)	(6.92)	(2.13)	(8.42)
LGBTQ	20.05	13.66	26.10	13.73	5.86	10.95	48.64
Non-Religious ($n = 22$)	Range: 18-28	(1.15)	(7.21)	(9.26)	(6.52)	(1.96)	(7.29)
LGBTQ	19.85	13.75	24.26	10.90	11.35*	10.10	45.60
Religious/Spiritual ($n = 20$)	Range: 18-24	(1.19)	(6.96)	(8.23)	(10.86)	(2.04)	(7.40)

Note. * $p \leq .05$ at a marginal level, t -test between LGBTQ non-religious vs. LGBTQ religious

2.2 Materials

We presented our stimuli using a Powerpoint presentation on a Macintosh desktop computer. The first slide read, “You will see a series of pictures of people, objects, and scenes appear on the screen. Please look at these pictures as if you were watching television.” These instructions were presented in size 44-point Calibri font and were also read aloud. Participants then viewed a picture task on a computer screen consisting of 45 pictures (24 weight-related and 21 neutral) presented on a white background (Appendix A). These pictures were obtained on the Internet and were rated for “relatedness to weight consciousness” by a separate group of 15 women aged 18-30 years old in a previous study (Chung, Sharifi, & Harris, 2011). The pictures were presented using a Powerpoint slideshow for 4 seconds each and displayed various images related to food, body, and exercise as well as images of matched neutral pictures, such as common objects and nature scenes. Two encoding counterbalancing lists were used.

2.3 Measures

Participants completed the PANAS (Positive Affect Negative Affect Schedule; Watson, Clark, & Tellegen, 1988), which asked them to rate how they were feeling based on positive and negative words (e.g., Excited or Scared) using a Likert scale from (1) *very slightly or not at all* to (5) *extremely*. Participants completed a digit-span task (Wechsler, 1997), or letter-number sequencing task (Wechsler, 1997), which required them to rearrange letters and numbers based on their sequence (alphabetical and numerical). They also completed the Eating Attitudes Test (EAT; Garner, Olmsted, Bohr, & Garfinkel, 1982) that asked them about their current eating habits and their relationship with food. Answers ranged from Always to Never. Participants who indicated suicidal thoughts or attempts were referred to the on-campus counseling center.

Participants were then asked to complete the Religious Orientation Scale (ROS; Allport & Ross, 1967), which determines if their religious beliefs are intrinsic or extrinsic with answers ranging from (1) *I strongly disagree* to (5) *I strongly agree*. They then completed the Beck Depression Inventory (BDI; Beck, Ward, Mendelson, Mock, & Erbaugh, 1961), which assessed how they have been feeling the past few days to the past week in terms of mood. Participants who scored above 10, which indicates possibility of depression, were referred to the on-campus counseling center. Furthermore, participants filled out the NEO-FFI (NEO Five-Factor Inventory; Costa & McCrae, 2003), a personality questionnaire that measures personality type. Then participants completed the Frequency of Forgetting questionnaire (FOF; Rasch Modeled Memory Self-Efficacy Scale; Zelinsky & Gilewski, 2004), which assesses how they rate their own memory.

2.4 Procedure

Participants were given as much time as needed to complete each task. After signing an informed consent form, participants were asked to complete a health and demographics questionnaire, on which their age, weight, height, preferred gender, sexual orientation, religion, and any diagnosis of psychological disorders were noted. Upon finishing that questionnaire, they were asked to complete the PANAS. Participants then viewed the encoding portion of the picture task but were not told that a memory test would follow.

After viewing the pictures, participants were asked to complete a digit-span or letter number sequencing task unrelated to the pictures they just saw (Wechsler, 1997). Following this filled delay period, they were asked brief questions pertaining to their experience thus far during the study (Appendix B). They were then asked to recall as many pictures as they could remember from the study phase using brief verbal descriptions while their answers were recorded. Participants were also asked which picture, if any, stood out the most, why, and if they used a strategy while recalling the images. Researchers noted if there were picture intrusions, meaning that the participants reported an image in the picture task that was not displayed. Participants then completed the EAT, the ROS, the BDI, the NEO-FFI, and the FOF questionnaire, respectively. Before completing the ROS, participants were told that even if they were not religious, to complete the scale to the best of their ability. Lastly,

participants completed the PANAS once again. Participants then signed a form that confirmed they received compensation for their participation.

3. Results

We first conducted a 2 (picture recall: weight related or neutral) X 2 (sexual orientation: LGBTQ versus heterosexual) X 2 (religious versus non-religious) mixed-factor ANOVA to examine the effects of sexual orientation and religiosity on picture recall. This analysis revealed a significant main effect of picture recall, $F(1, 78) = 37.01, p < .01$, where participants recalled more weight-related pictures ($M = 7.50$) compared to neutral pictures ($M = 5.40$). Contrary to our hypotheses, no other effects were significant.

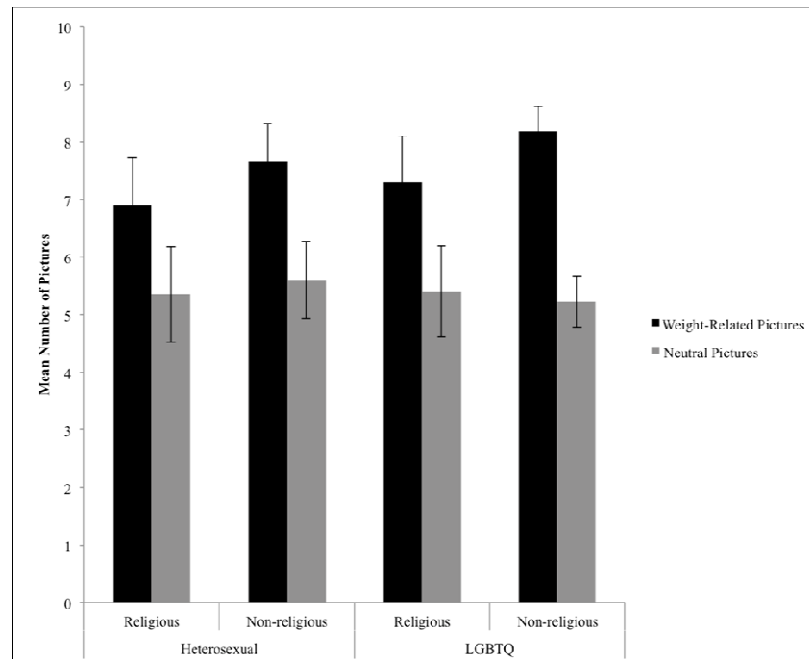


Figure 1. Weight-related and neutral pictures recalled: Means and standard errors

We then conducted a 2 (picture intrusions: weight related or neutral) X 2 (sexual orientation: LGBTQ versus heterosexual) X 2 (religiosity: religious versus non-religious) mixed-factor ANOVA. This analysis revealed a significant main effect of picture intrusions, $F(1, 78) = 5.27, p < .01$, where participants had more neutral intrusions ($M = .31$) than weight-related intrusions ($M = .15$). There was a significant two-way interaction between sexual orientation and religiosity, $F(1, 78) = 5.88, p < .02$; and a marginal significant two-way interaction between picture intrusions and religiosity, $F(1, 78) = 3.80, p = .055$.

We then conducted t-tests to further understand these interactions. Heterosexual, religious participants ($M = .70$) displayed more intrusions than heterosexual, non-religious participants ($M = .20$), $t(38) = 2.34, p < .03$. This difference was mainly driven by the difference in weight-related intrusion rate, with religious $M = .40$, non-religious $M = .0$, $t(38) = 2.63, p < .02$.

To test our hypothesis that participants who were weight conscious would show a higher rate of memory for weight-related stimuli, we performed an independent t-test between high (over 10) and low EAT scores (10 and below) for weight-related pictures. We hypothesized that there might be a difference between weight-related pictures recalled for participants with high EAT scores versus low EAT scores. The results did not support our hypothesis, $t(80) = .46, p = .64$. We also did not observe a significant difference in picture recall between LGBTQ and heterosexual participants, $t(80) = .68, p = .50$.

In order to test our hypothesis that participants who were more weight conscious and extrinsically religious would be more likely to remember weight-related stimuli, we conducted an independent t-test between high

(over 10) vs. low EAT (10 and below) scores, and high (over 10) vs. low (10 and below) extrinsic ROS scores for weight-related images. There were no significant results in this analysis, all p 's > .05. We also did not find support for significant differences in EAT scores between heterosexual and LGBTQ participants, all p 's > .05. Although we did observe marginally higher EAT scores for religious participants ($M = 8.83$) in comparison to non-religious participants ($M = 5.90$), $t(80) = 1.68$, $p < .10$.

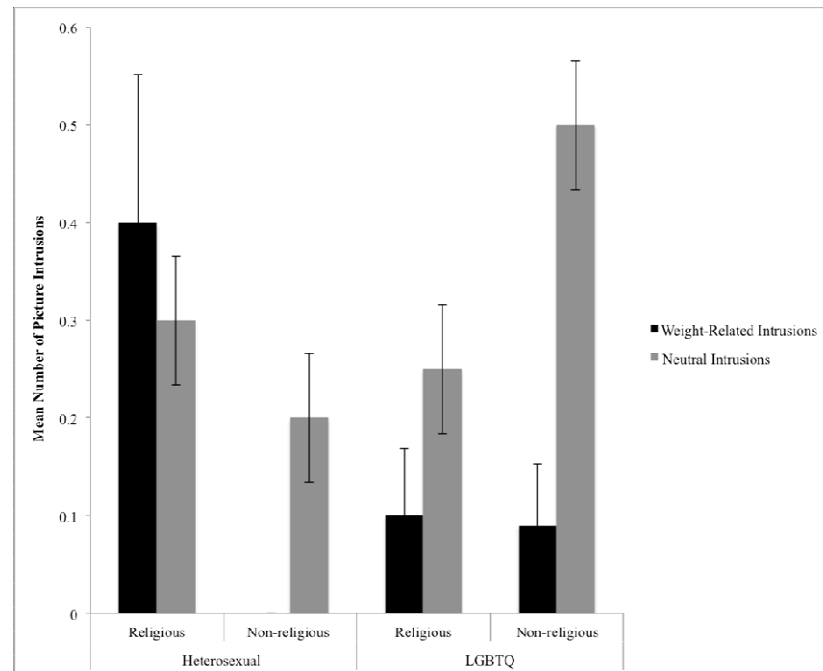


Figure 2. Weight-related and neutral intrusions recalled: Means and standard errors

To examine how depression interacts with participants of differing sexual and religious orientations, we conducted correlation analyses. We found a significant positive correlation between EAT and BDI scores overall, $r = .434$, $p \leq .01$. Further analyses revealed that there was a statistically significant positive correlation between EAT and BDI scores for non-religious, heterosexual participants, $r = .484$, $p < .05$, for non-religious, LGBTQ participants, $r = .592$, $p < .01$, and for religious, LGBTQ participants, $r = .626$, $p < .01$. The only group that did not show this correlation was the heterosexual, religious group.

We found a significant difference in ROS intrinsic scores between LGBTQ, religious ($M = 9.05$) and non-religious ($M = 16.05$) participants, $t(40) = -5.063$, $p < .001$. Furthermore, heterosexual participants with high extrinsic scores on the ROS (over 10) scored significantly higher on the BDI ($M = 24.00$) than those with low extrinsic scores (10 and below, $M = 8.60$), $t(38) = 3.43$, $p < .01$.

4. Discussion

This study examined the effect of sexual and religious orientations on memory for weight-related stimuli. Participants were asked to fill out a series of questionnaires and scales, view a series of weight-related and neutral pictures, and then recall the images they remembered. This research is important in that it examines the cognitive processes of young women, who are especially prone to eating disorders and serves as a follow-up study from past research by Flicek and Urbas (2003) as well as Berg (1988) as we examined eating behaviors and cognition in students attending a women's college. The aforementioned studies only examined students eating behaviors at co-ed residence halls. While there was a difference in eating disordered symptomology between women living on co-ed floors in Berg's study, Flicek and Urbas' study did not find a difference. It is important to consider that these studies failed to account for sexual orientation, which is an important aspect of the present study.

Our results revealed an overall positive correlation between EAT and BDI scores, although the only group that did not show this correlation was the heterosexual, religious group. Also, there was a significant difference between recall of weight-related and neutral intrusions. Specifically, religious, heterosexual participants recalled more intrusions than non-religious, heterosexual participants. We also found that LGBTQ, non-religious participants had higher intrinsic scores on the ROS scale than religious participants; and heterosexual participants' BDI scores were higher if their extrinsic scores on the ROS was higher. Interestingly, religious, homosexual participants had significantly higher EAT scores than non-religious participants.

Our results corroborate with past findings by Smith et al. (2004), in which participants who were religious for external reasons were more likely to experience depression and eating disorder symptoms. Furthermore, there was a significant correlation between BDI and EAT scores in all groups but heterosexual, religious participants. This positive correlation is in line with past studies such as Matthews-Ewald, Zullig, and Ward (2014), and suggests that these participants may be most prone to depression and eating disorders occurring together. Religious, heterosexual participants, on the other hand, may be protected from these disorders, which supports past research (Jacobs-Pilipski et al., 2005), in which religious and spiritual women coped with their body images through their strong beliefs.

Our findings contradict results reported by Li, Jackson, and Chen (2011), who found that weight dissatisfied women made the most weight-related errors. Though the following results were only of marginal significance, religious, LGBTQ participants had higher EAT scores, indicating weight consciousness. However, religious, heterosexual participants recalled more weight-related intrusions, which agrees with past research by Chung and Ryan (2013) as well as Gettelman and Thompson (1993), in which heterosexual women experience more weight-conscious thoughts than LGBTQ women.

5. Conclusions

The focus on maintaining a slim figure greatly influences women's eating behaviors and body image, which may also implicate significant changes in their cognition. The present study addressed new questions regarding cognitive changes associated with weight consciousness, sexual orientation, and religiosity. Findings from this study will be especially pertinent in an academic institution that is focused on women's education and advancement. This study contributes to the field of psychology, especially cognitive and clinical psychology, by introducing new facets that could alter the way we view and treat disordered eating among young women.

Past research by Berg (1988) found that women living in coeducational residence halls show a higher rate of disordered eating symptoms compared to women living in same-sex dormitories. However, other research by Flicek and Urbas (2003) found no difference between coed and single-sex residence halls in terms of disordered eating behaviors. This discrepancy in research raises the question of whether there would be a difference between coed colleges and women's colleges. We will explore this research question in a future study. Furthermore, the term "religious" used in this study was very generalized. Future research should include more extensive measure for spirituality to further explore this complex factor.

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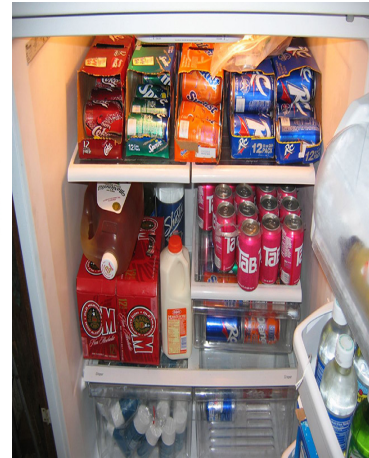
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Appendix A

Sample weight-related pictures:



Sample neutral pictures:



Appendix B

Post-Experimental Questionnaire

We're interested in knowing about your experience in our laboratory today.

1. Were any of the instructions difficult to understand?
 - a. If yes, which ones?
 - b. Were these instructions (re)explained to your satisfaction and do you feel that you were able to complete the task appropriately?
2. Picture-Task Recall
3. Did you know that your memory of the pictures would be tested?
4. Did anyone picture stand out more than the others?
 - a. Can you describe that picture?
 - b. What made that picture so memorable?
 - c. Did you use a specific strategy while recalling the pictures?
5. Do you have any specific comments or suggestions for us regarding the tasks you completed today?

