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Self-Affirmation Intervention on Eating Disorders

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SELF-AFFIRMATION INTERVENTION ON EATING DISORDERS

by

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ABSTRACT

DEDICATIONS

For my Sister, who has shown me what silent strength looks like. You are my inspiration, my biggest motivation, and my person. Thank you for teaching me to be unapologetically myself and to fight for what I believe in.

For my mother, for showing me what unconditional love looks like. Thank you for being a constant in my life and showing me the importance of never giving up. You are the reason I am who I am today, and I am forever grateful for you.

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INTRODUCTION

The purpose of this paper is to test the feasibility of a self-affirmation identity technique as an intervention in the treatment of patients with eating disorders. The American Psychiatric Association (2013) defines feeding and eating disorders as a persistent disturbance regarding eating or any behavior that is related to eating that alters how one ingests food and notably harms one's physical condition or their ability to function. The utilization of this technique to develop a self-affirming identity has been shown to be effective with other problem behaviors. Its usage with people who are at risk to develop or who already have an eating disorder has not been adequately explored, despite evidence that eating disorder problems are related to identity issues. Therefore, this paper will analyze the effectiveness of the self-affirmation identity technique on those who are at risk and/or who are already suffering from an eating disorder.

Identity Development

Erikson's (1968) theory of personality suggests that psychosocial development is an ever-changing process composed of eight stages. Erikson described each stage as having a conflict surrounding a particular psychosocial issue. He explained that every individual experiences this conflict because growth and a new sense of awareness come together with a vulnerability. He stated that with each stage, a conflict can potentially occur as each stage is such a radical change in how one views the world and is susceptible to their own unique vulnerability. The fifth stage in Erikson's theory is centered around the task of forming an identity, which typically occurs in adolescence and/or early adulthood. Those struggling in the development of a strong identity and experiencing the "crisis" in Erikson's fifth stage might be experiencing identity distress (Berman, Montgomery, & Kurtines, 2004). Identity Distress can be defined as a more severe

distress regarding the difficulty or inability to accommodate parts of oneself into a rational and suitable sense of self (Berman & Montgomery, 2014). Cohen and Sherman (2014) explain that in life threatening scenarios, one can utilize self-affirming identity techniques to minimize stress, enhance well-being, and increase the number of behavioral changes one is willing to make.

Research has suggested that utilizing self-affirming techniques can help in the strengthening and advancement of identity and aid in recovery. Cascio and colleagues (2016) suggest that self-affirming techniques are beneficial due to the capability to expand someone's general point of view and help people with a reduction of a negative outlook. Therefore, the cultivation of an identity that is focused on positivity is possible to achieve through this technique. Corning and Heibel (2016) explain that to achieve a successful recovery from an eating disorder, the first step to take in that direction is the development of an authentic identity above all else. Finding one's identity is an imperative part of healthy development. If adolescents struggle to achieve a healthy identity, they may form maladaptive coping skills that interfere with development. In addition, the way in which these individuals view themselves becomes more negative. Evidence shows that symptoms of eating disorders are associated with heightened feelings of insecurity, social anxiety, social-emotional isolation, alienation from one's peer group, more negative and fewer positive schemas about the self, lower social competence, and having greater interpersonal deficits (Schutz & Paxton, 2010; Stein & Corte, 2006; Zaitsoff et al., 2009). Clinicians and researchers specifically hallmarked an attribute of those clinically diagnosed with eating disorders with having low-self-esteem.

Casper (1983) suggests that when adolescents do not have a secure self-concept, they will be more inclined to use thinness in order to individualize themselves. Eating disorder symptoms are used as temporary relief to tolerate these internal conflicts and experiences. Since the

development of an eating disorder typically occurs when adolescents are going through a critical identity-development period, it can lead them to suffer and fall behind developmentally in comparison to their peers. This is because the individual becomes consumed with eating, body-related behaviors, and appearance, rather than the normal developmental tasks of adolescence.

Culture places a very high value on appearance, thus strengthening the thin ideal in a virtual platform. Corning and Heibel (2016) demonstrate this in The *Onslaught* video that was produced by the Dove Campaign for Real Beauty. This campaign gave a direct message to society of its faults, stating that women should not be praised for their character or capability, but simply for their sexual allure. This is the culture young adolescents are growing up in and being exposed to. However, when an individual places all of their focus on the way they look, and that aspect of themselves becomes threatened, it ultimately threatens the broader sense of self as there are no other mechanisms of protection.

Therefore, there is a need for preventive measures, such as youth development programs, that encourage a positive identity (Ferrer-Wreder et al., 2002). Researchers could study what makes these programs so successful in developing a strong sense of oneself and being able to develop positive relationships with others and utilize these methods in prevention efforts. Laboratory-based experiments have already proven that strengthening an individual's values will positively result in health effects. Steele (1988) explains that the self-affirmation theory works in this way by supporting an unrelated value of oneself to take the significance and value off of what is being threatened. Its utility and power in response to eating and body-related concerns has not yet been tested. However, it has been proven effective among other problems such as drinking and substance abuse.

This paper will: (1) analyze the dangers and complications associated with eating disorders, (2) discuss how self-affirmations are related to identity development, (3) review studies that have demonstrated how self-affirmations have proven to be a successful approach with other problems, and (4) suggest how a self-affirmation technique might help with eating disorders.

Dangers Associated with Eating Disorders

There are medical, psychological, and social complications that can take a toll on patients with eating disorders. Sachs and colleagues' (2016) research results indicated that eating disorders can cause severe medical complications. Anorexia Nervosa, in specific, has the highest mortality rate compared to every other mental illness because of the four components of the cardiovascular system that are severely compromised.

Anorexia Nervosa shares similar medical complications with other forms of distorted eating as well. For instance, the National Eating Disorders Association (2018) describes how malnourishment can lead to a low heart rate and blood pressure, while purging can also lead to an irregular heartbeat or heart failure due to an electrolyte imbalance. Restriction on food consumption, purging, constipation, and binging can all have negative consequences on a patient's gastrointestinal system. Further research emphasizes that restriction and purging can lead to abdominal pain, nausea, blood sugar fluctuations, bacterial infections, ruptured esophagus from vomiting, and inflammation of the pancreas, while laxative abuse can result in damaged nerve endings. Norris and colleagues (2015) explain that gastrointestinal complications may not be permanent. Through the refeeding process, research has provided evidence that these complications can diminish. From a psychological standpoint, patients with eating disorders have shared traits. However, with each disorder, the psychological components can vary. Lazter and

Stein (2019) suggest that traits such as low self-worth, obsessive-personality, and perfectionism are shared among patients with eating disorders. They describe patients with either Bulimia Nervosa and/or Purging Disorder as potentially displaying higher rates of impulsive behaviors and emotional dysregulation, therefore having the potential to be characterized with DSM-5 cluster B personality disorders. They also describe how Anorexia Nervosa is associated with rigidity, avoidance, and perfectionism, which might be demonstrated in elevated rates of DSM-5 cluster C personality disorders. The DSM-5 also declares identity issues as one of several common dimensions that crosses most all personality disorders (American Psychiatric Association, 2013).

While different eating disorders have been associated with specific traits, some characteristics overlap among eating disorders in general. Corning and Heibel (2016) provide evidence that reductions in self-esteem promote greater risk for the development of an eating disorder. Research suggests that those with a weaker sense of who they are have a lower self-esteem, while individuals with a greater understanding of who they are, and commitment to their identity have a higher self-esteem (Corning and Heibel, 2016). Prevention programs therefore might benefit by placing their efforts on bolstering a strong positive identity. Fitzsimmons and Bardone-Cone (2011) explain that researchers have long since identified and recognized that eating disorders are used as a coping mechanism in stressful and uncomfortable situations, although deemed ineffective.

Cardi and colleagues (2018) found that over two thirds of the 90 participants in their research on Anorexia Nervosa recalled social difficulties before the development of their illness. These researchers also discussed the high social and self-standards to which patients with Anorexia Nervosa held themselves to, all while fearing a negative evaluation from their peers.

While social complications can play a role in the development of an eating disorder, eating disorders can also negatively impact social relationships. Patel and colleagues (2016) conducted a study in which they examined the social functioning in youth with eating disorders. Their research explored the loss of connection and the loss of friendships throughout their illness.

Self-Affirmations Assist in Identity Development

Steele (1988) suggests that the goal of a self-affirmation is to sustain the notion of self-adequacy (see also Cohen & Garcia, manuscript in preparation). Steele explains further that maintaining and protecting one's status as a good person can look differently among varying cultures and environments. Cohen and Sherman (2006) view self-affirmations as an opportunity for people to reflect on what is important to them, which may be completely unrelated to the threat that is taking place in their lives. Alexander (2014) elaborates on this by suggesting that reflecting on what is significant to people and affirming these things in one area of their lives can help strengthen their view of themselves in the areas that are being threatened, which can result in awareness and evaluation of the occurring threat. The self-affirming identity technique is a process utilized to take people with threatening complications and help them enable a positive identity. Self-affirmation and self-affirming identity techniques are not synonymous, as a self-affirmation is a state of mind, and self-affirming identity techniques are the approaches used to achieve it.

A review of current techniques of self-affirmation intervention have demonstrated its effectiveness in the treatment of alcohol abuse (Dulin et al., 2013), smoking (Dibello et al., 2014), and alternative drug usage (Barkoukis et al., 2014). Steele (1988) explains the process of self-affirmation as viewing oneself with integrity, therefore, resulting in the promotion of stability in how one might view themselves while faced with a psychological threat. In the

utilization of this technique, it is important to understand the three motives behind self-integrity. Cohen and Sherman (2014) suggest that the first aspect is more generalized in understanding that one is a good person and not just confined to one specific role. The second aspect involves the feeling of adequacy and the third aspect is the ability to praise oneself.

Self-affirmations can serve as a reminder to participants in several ways. Cohen and Sherman (2014) elaborate that they remind participants that they have integrity and that there is balance in life, including adversity. There is a longevity to the role that affirmation plays on identity, which Cohen and Sherman demonstrated with their study on student grades in the classroom. After completing a values-based intervention multiple times in the classroom throughout the year, with African Americans in one school (Cohen et al., 2006, 2009) and Latino students in varying schools (Sherman et al., 2013), the grade point average of these identity-threated groups significantly improved.

A values-based intervention, such as the one discussed in Cohen and Sherman's (2014) study, allows participants to rank the order of importance of their core values through writing exercises. This brings the participants to the realization that their addictive behavior does not align with their values. Corning and Heibel (2016) emphasize that doing this intervention and incorporating a positive program can be beneficial in the encouragement of adolescents' identity development.

Self-Affirmations Successfully Utilized with Other Problems

The techniques utilized to enhance an affirming identity include building a positive self-identity based on relating the individual to their core values and goals. This intervention has proved effective in terms of several different addiction treatments. Armitage and Arden (2016) performed a study in which they added an alcohol-warning label along with this statement: "If I

feel threatened or anxious, then I will think about the things that are important to me." The alcohol-warning label was effective in decreasing the amount of alcohol consumed during a wine-pouring task. Another example of a self-affirmation intervention being effective in the treatment of alcohol abuse has been found with a portable application on the phone called "Buddy" where people follow Buddy Steps as a part of their support system (Dulin et al., 2013). Dulin and colleagues (2013) describe that the first step of Buddy is to provide a short motivational intervention, which educates participants on the negative consequences that alcohol can have on the body. The second step involves helping to identify geographic areas where the participant might have consumed or purchased alcohol previously, thus encouraging the avoidance of these high-risk locations that might be triggering. Step three involves putting participants in contact with a pre-selected supportive user when they might be struggling (similar to a sponsor in AA). The next step is to increase the participant's knowledge of the associations that might be increasing cravings and how to manage them. Passive coping patterns can lead to higher levels of alcohol consumption. The next step is borrowed from Problem Solving Therapy, which is a therapeutic intervention that has been shown to be effective in helping participants cope with stressors and lessen distress. The sixth step involves communication, starting with an assessment of social situations where the participant has experienced triggers of consuming alcohol and providing the knowledge of coping skills to handle high-risk situations, and the ability to communicate effectively. The last feature of this program involves finding pleasurable activities which can be used when the participants feel triggered to drink, providing a pleasurable alternative activity that does not involve drinking. There are two primary intervention components in this program. The first is to internalize within the participant's identity the awareness of the triggers in the environment that causes a negative behavioral reaction. The

second is to substitute pleasurable activities and support in dealing with avoiding these negative activities. The system therefore provides a warning, but it also provides a substitute by empowering the positive aspects of one's identity via coping with potential dangers. As explained previously by Steele (1988), the purpose of a self-affirmation is to make people feel adequate and able to view themselves as good people. Hence, learning to cope with danger is an identity intervention because danger can harm this feeling of self-adequacy and self-worth.

Corning and Heibel's (2016) research has shown that the self-affirmation intervention can have a positive effect on health behaviors such as a smokers' openness to the risk and harm of smoking. The self-affirmation theory has demonstrated effectiveness in decreasing cigarette smoking throughout multiple research studies. Kessels and colleagues' (2016) research on affirmations in response to graphic antismoking images had the participants identify their most important core value and explain the significance of it, including how they would apply it to their daily lives. Those who were self-affirmed smokers were more fixated on the information of the negative consequences of smoking than those who were not self-affirmed smokers. The identity affirming intervention resulted in greater attention enhancement.

Harris and colleagues (2007) randomly assigned a group of young smokers to an affirming identity technique or to a control task regarding the viewing of four images intended to be used on cigarette packages. Those assigned to the affirming identity technique were administered a self-affirmation manipulation in which participants were instructed to write down all of their desirable characteristics. After a one week follow up, the participants were assessed again and results indicated that those who were given the 'self-affirmation manipulation' task were less defensive in responding to the dangers in the cigarette warnings.

Another research experiment suggesting the benefits of self-affirming identity techniques by Memish and colleagues (2017) involved randomly assigning participants to an intervention or control group. The intervention group received a questionnaire that contained personal core values and positive traits before they viewed an emotive health message. The cigarettes per day that the participants smoked were recorded both before and also a week after the intervention took place. Results indicated that the affirming technique (reflecting on positive traits about oneself) increased the awareness and effectiveness of the emotive smoking health graphics in decreasing smoking behavior.

Switching from nicotine smoking to other drugs, Barkoukis and colleagues (2014) studied the effects of self-affirmation on the usage of performance-enhancing steroids amongst athletes. Sixty competitive athletes, all who abused steroids, were randomly assigned into one of two different groups. In the first group, the participants were given a self-affirmation manipulation. The second group was a control group. The affirmation manipulation procedure involved the use of a questionnaire (Reed & Aspinwall, 1998) that asked the participants to list their past acts of kindness. An example of a question on this survey was "Have you ever been considerate of another person's feelings?" Participants whose responses were positive were then asked to explain further with descriptions about their kindness. Participants in the control group answered a questionnaire on unrelated subjects having nothing to do with kindness. Participants who were in the self-affirmed group indicated a diminished desire to use steroids.

Research with the LGBT community found that an affirming identity technique for prevention and intervention of drug and alcohol addiction was beneficial for this population as well (Peregoy et al., 2006). The researchers suggested that cultivating a self-affirming identity

entails creating an environment that allows people to share who they are sexually, because it supports people in the recognition that their sexual orientation has an impact on their life.

Religion and faith can also have a positive impact on identity change through recovery. Religion and faith can be utilized as a self-affirmation identity technique because dedicating oneself to a Higher Power and its ways can create positive feelings by affirming oneself to be a worthy and moral person. Johnson and Pagano (2014) conducted research studying whether faith could potentially rewire an addict's brain. Their findings suggested that both spiritual and religious involvement were helpful for those who suffer from addiction and substance abuse. Grim and Grim (2019) suggested that religion guides people away from potential drug addiction, and aids in recovery, since those who suffer from addiction but are part of a spiritual program have a greater chance of following their program and staying clean.

Potential Success Utilizing a Self-Affirmation with Eating Disorders

The goal for this current research project was to explore the effectiveness of self-affirming identity techniques amongst participants with eating disorders. If the results of the intervention were to demonstrate that increasing positive self-awareness can aid participants with eating disorders in recovery, prevention and intervention programs could be developed to aid in this positive identity formation process.

Ferrer-Wreder and colleagues (2002) have suggested that the concept of identity has been an important focus in the creation of positive development programs aimed at fostering positive adjustment and optional functioning (e.g., Berman et al., 2008; Kurtines, et al., 2008). Likewise, targeting identity issues might be an important part of treatment programs for eating disorders, as well as for prevention programs aimed at promoting healthy eating and lifestyle habits.

Based on the results of the research discussed above, it is apparent that the development of an affirming identity is an effective method of combatting maladaptive behaviors. There are similarities between the conditions that create eating disorders and addictions to substance abuse including drugs, alcohol, and smoking. According to Marcia (1966) those who have low identity exploration and commitment have more difficulty overcoming maladaptive behavior and demonstrate a lack of direction. Therefore, the techniques used to develop affirming identity to overcome these health issues can be applied in the same manner to enhance the treatment and overcome an eating disorder.

In building a strong identity, it is important to identify all of the components that play a part in recovery. The Substance Abuse and Mental Health Services Administration (2020) defined four major aspects that define recovery. The first component of recovery is health and the ability to make informed healthy decisions that are in support of the development of strengthening one's identity. The second component is home and the ability to maintain stability in one's life. The third component focuses on having a purpose and having meaning in one's life, whether through faith, independence, or income, all of which compose a healthy identity. The last component explains that it is essential to have a sense of love and belonging in the process of recovery. All four components tie back into the utilization of self-affirming techniques by allowing people to realize the nature of their problem. By using self-affirming techniques, individuals can utilize their positive identity in defeating the issues that prevent them from a happy, healthy life.

Purpose and Benefit

The research discussed above explores the effectiveness of self-affirmation interventions amongst various behavioral difficulties. However, there is no research to this author's knowledge conducted to analyze the effectiveness of self-affirming identity techniques amongst eating disorders. Kamps and Berman's (2011) study indicated that identity distress has a strong correlation to appearance evaluation, body areas satisfaction, and overweight preoccupation. Kaine and colleagues (2020) found that overweight preoccupation and body image satisfaction significantly predicted scores on a body image based identity measure. However, non-body image based measures of identity were also related to these factors, such that identity distress correlated with both overweight preoccupation and with body area satisfaction, and further, body area satisfaction was also positively related to identity commitment and negatively related to ruminative identity exploration. The goal for this research was to explore the effectiveness of self-affirming identity techniques amongst participants with eating disorders.

Hypotheses

1) People who have an eating disorder will score significantly higher in identity distress than those in recovery from an eating disorder.
2) After the intervention, participants will demonstrate a significant reduction in negative eating attitudes, as compared to a control group.
3) After the intervention, participants will demonstrate a significant reduction in identity distress, as compared to a control group.
4) After the intervention, participants will demonstrate a significant increase in identity exploration and identity commitment, as compared to a control group.

   Increases in identity exploration and commitment, as well as reductions of identity distress from pre to post intervention will predict decreases in negative eating attitudes.

METHODS

Participants

This study included 58 participants of which 78.8% were female, 6.1% were male, and 1.5% endorsed "other". The education distribution included 25.8% who indicated that their highest year in school as being a high school graduate/GED, 39.4% as some college, and 22.7% as being a college graduate or higher. The ethnic/racial distribution was 72.7% White, non-Hispanic, 7.6% Hispanic or Latino/a, 1.5% Asian or Pacific Islander, and 6.1% identified as mixed ethnicity or other. Of the 58 participants, 42.4% identified as currently have an eating disorder or eating problem, 30.3% said they were in recovery/recovered from their eating disorder, and 15.2% of the participants never had an eating disorder or eating problem.

The participants were recruited from members of the Anorexia, Bulimia, and EDNOS Recovery Support Group on Facebook. Participation was limited to those 18 years of age or older and either self-identified as having an eating disorder or were in recovery from an eating disorder.

Measures

A copy of all measures appears in the appendices below.

A *demographic Questionnaire* was used to record sex, age, ethnicity, and self-identification as having an eating disorder or in recovery.

The *Eating Attitude Test* (EAT-26; Garner et al., 1982) is a refinement of the original EAT-40, and is comprised of 26 items rated on a six-point scale based on how often the individual engages in specific behaviors (always, usually, often, sometimes, rarely, and never). It does not provide a specific diagnosis for an eating disorder, but it provides an instrument to help

identify individuals who could be a risk for an eating disorder (Garner et al., 1982). The test-retest reliability for the EAT-26 have ranged from .84 to .89. In this study, the reliability (Cronbach's coefficient alpha) was found to be .95 for the pre-test and .94 for the post-test.

Dimensions of Identity Development Scale (DIDS; Luyckx et al, 2008). The Commitment Making subscale and the Exploration in Breadth subscale from the DIDS was used to measure identity development. It includes 10 items rated on a 7-point Likert scale (strongly disagree, disagree, slightly disagree, unsure, slightly agree, agree, strongly agree). Cronbach's alphas were reported to be .86 for Commitment Making and .81 for Exploration in Breadth (Luyckx et al., 2008). In this study the commitment subscale had a Cronbach's alpha of .98 for the pre-test and .96 for the post-test. The exploration subscale had a Cronbach's alpha of .97 for the pre-test and .95 for the post-test.

Identity Distress Survey (IDS: Berman et al., 2004). The Average Distress Rating from the IDS was used to measure identity distress across seven domains (long-term goals, career choices, values, sexuality, group affiliation, and friendships), ranked on a 5-point scale (not at all, mildly, moderately, severely, very severely). The reported internal consistency of the Average Distress Rating subscale has been reported to be .84 with test re-test reliably of .82 (Berman et al., 2004). In this study the reliability was found to .57 for the pre-test and .41 for the post-test.

The *Promotion Affirmation* (PA; Alexander, 2002), is a survey reflecting self-affirming identity on hopes and aspirations. However, it was constructed in a general format that included artistic skills, politics, music ability, etc. It was modified for this study by incorporating values that pertain to hobbies, loyalty, control, appearance, and self-care, in order to more specifically address the self-affirming identity issues to which a participant with an eating disorder would

relate. It included 11 values rated on a 7-point Likert scale (strongly disagree, disagree, slightly disagree, unsure, slightly agree, agree, strongly agree). This measure served as the intervention and was not scored. In addition to ranking 11 values, participants were asked to reflect in detail on some specific examples of these values and how it made them feel.

Creature of Habit Scale, Food (COHSF: Ersche, et al., 2017) is a subscale of the *Creature of Habit Scale.* The subscale explores food-related habits such as preferences, automatic responses, lack of planning and forethought. It was shortened from the original 30 items to 11 items in order to match the length of the PA (used in the experimental condition). This questionnaire was used as the control condition, and like the PA, was not scored.

Procedure

To ensure privacy and anonymity, participants recruited from Facebook were directed to Qualtrics, an external web survey site. Those who chose to participate were shown an internal review board (IRB) approved Explanation of Research, which specified that this survey is voluntary, and they have the right to not participate in the survey at any given time.

All participants received a survey battery with the pre-tests (demographics, EAT-26, DIDS, IDS) and the posttests (EAT-26, DIDS, IDS). In between these two sets, the experimental group (n = 19) *received* the PA, while the control group (n = 23) received the COHSF. There was no time lapse in between the pre-test, intervention or control, and post-test. All surveys were completed in one sitting. Participants were randomly assigned to a condition. When participants accessed the survey on Qualtrics, the program randomly presented either the experimental or control condition survey.

RESULTS

Preliminary and Descriptive Analyses

The range, mean, and standard deviation for all study variables are shown in Table 1. A correlation matrix for all measures in the pre-condition are shown in Table 2. A ONEWAY Analysis of Variance (ANOVA) was conducted to look for differences among three education groupings on all the measures in this study. The only variable that showed a significant difference was eating attitudes behavior on the post-test ($F_{(2, 32)} = 3.60$, $p = .039$). A Least Square Difference (LSD) post hoc analysis revealed that the high school graduates scored significantly higher than those with some college ($p = .016$) and college grads scored between the two groups but was not significantly different from either group. Age was only significantly correlated with exploration in breadth on the post-test ($r = -.66$, $p < .001$). There was not enough variation to run analyses for gender or ethnic differences. There were no significant differences between eating disorder groups (eating disorder, no eating disorder, recovered) for the pre-tests on the IDS ($F_{(2, 45)} = 2.50$, $p = .094$), or the either subscale on the DIDS; commitment making ($F_{(2, 45)} = 1.84$, $p = .171$), exploration in breadth ($F_{(2, 45)} = 1.97$, $p = .151$). There was a significant difference between each of the eating disorder groups for the pre-test on the EAT-26 ($F_{(2, 48)} = 20.90$, $p < .001$). An LSD post hoc revealed that all three groups were significantly different from each other, with those who reported that they currently have an eating disorder scoring the highest, those who who reported that they have never had an eating disorder scoring the lowest, and those who reported being recovered from an eating disorder in the middle. There were no significant pre-test differences between experimental and control groups on the IDS ($t_{(40)} = -.18$, $p = .857$), EAT-26 ($t_{(40)} = -.74$, $p = .464$), Commitment Making ($t_{(40)} = .47$, $p = .641$), or Exploration in

Breadth ($t_{(40)} = .50$, $p = .619$). Table 3 reports the means and standard deviations for all pre and post tests for both the experimental and control groups.

Main Analyses

Hypothesis 1

To test hypothesis 1 (People who have an eating disorder will score significantly higher in identity distress than those recovered from an eating disorder) a t-test was conducted. There was no significant difference in identity distress for those who reported that they have an eating disorder and those who reported that they have recovered from an eating disorder, ($t_{(39)} = -.23$, $p = .814$). Thus, this hypothesis was not confirmed.

Hypothesis 2

Hypothesis 2 (After the intervention, participants will demonstrate a significant reduction in negative eating attitudes, as compared to a control group) was tested with a Repeated Measures Multiple Analysis of Variance (RMMANOVA) with passage of time (pre and post scores) as the within subject factor and group (intervention or control) as the between subjects factor. To control for increased risk of a type I error when making multiple statistical tests, all four dependent variables from Hypotheses 2 through 4 (negative eating attitudes, identity distress, identity exploration, and identity commitment) were entered into the same analysis (see Table 3 for the pre and post means on all variables for both groups). The overall model was significant only for time (pre to post), $F_{(5, 22)} = 14.27$, $p < .001$. Group (intervention or control) was not significant, $F_{(5, 22)} = .39$, $p = .849$, nor was the interaction between group and time, $F_{(5, 22)} = .73$, $p = .608$. With particular regard to hypothesis 2, the predicted interaction for negative eating attitudes was not significant, $F_{(1, 26)} = .21$, $p = .650$. Thus, this hypothesis was not confirmed.

Hypothesis 3

Hypothesis 3 (After the intervention, participants will demonstrate a significant reduction in identity distress, as compared to a control group) was tested in the same Repeated Measures MANCOVA mentioned above in hypothesis 2. With particular regard to hypothesis 3, the predicted interaction for identity distress was not significant, $F_{(1, 26)} = 3.68$, $p = .066$. Thus, this hypothesis was not confirmed.

Hypothesis 4

Hypothesis 4 (After the intervention, participants will demonstrate a significant increase in identity exploration and commitment, as compared to a control group) was tested in the same Repeated Measures MANOVA mentioned above in hypothesis 2. The predicted interaction was not significant for identity exploration, $F_{(1, 26)} = .03$, $p = .863$, nor for identity commitment, $F_{(1, 26)} = .31$, $p = .582$. Thus, this hypothesis was not confirmed. Interestingly, time was significant for identity commitment with both groups showing a decline in scores from pre to post, $F_{(1, 26)} = 51.67$, $p < .001$. This was the only significant difference in regard to time, group, or interaction, and thus was likely to be responsible for the fact that the overall RMMANOVA was significant for time, as reported above under hypothesis 2.

Hypothesis 5

Hypothesis 5 (Increases in identity exploration and commitment, and reductions of identity distress from pre to post intervention will predict decreases in negative eating attitudes) was tested via stepwise multiple regression, with gender and age entered on step 1, change scores (posttest score minus pretest score) on the IDS and DIDS entered on step 2, and change scores on the EAT-26 as the dependent variable. The resulting equation was not significant ($F_{(5, 19)} = .91$; $R^2 = .19$; Adjusted $R^2 = -.02$; $p = .496$). With standardized beta coefficients not reaching

significance for identity distress change (β = .17, t = .81, p = .427), commitment making change (β = .37, t = 1.39, p = .181), and exploration in breadth change (β = .04, t = .14, p = .888). Thus, this hypothesis was also not confirmed.

DISCUSSION

As described previously by Steele (1988), a self-affirmation theory works by concentrating on positive values of oneself to take away the significance and value off of what is creating the maladaptive coping mechanism. Prior research indicates that eating and body-related concerns are linked to identity. Identity-oriented self-affirmations have shown promise to be effective with a variety of clinical issues such as drinking and substance abuse. Therefore, it seemed as if it would be effective with eating problems. The utility of this intervention has not yet been tested amongst this population. This study was able to examine participants through an anonymous online platform to see if a self-affirmation intervention would be effective amongst those who identified themselves as either currently having an eating disorder or eating problem, in recovery/recovered from their eating disorder, or never had an eating disorder or problem.

Limitations of the Study and Future Research

This study has several limitations that must be discussed. Self-affirmation interventions have been proven effective in other studies, however, it did not prove to be successful in this study. This could be due to a number of factors including a limited sample size. However, compared to other studies, this study fell somewhere in the middle with a total of 58 participants. With the exception of a study by Memish and colleagues (2017), which was relatively higher than the other studies with 265 participants, the majority of the studies averaged between having 45-85 participants. Still, future studies might want to recruit larger sample sizes to increase the power and generalizability of their findings.

Another reason for the lack of success in this study is the possibility that this was a weak intervention compared to the interventions other studies utilized. As a self-affirming intervention, all of these studies reflected on one's values. Just like Memish and colleagues

(2017) study, this study had an experimental and control group to see if there was a noticeable change after taking the intervention. However, this study had several differences from the other studies that should be taken into account during future research. Dulin and colleagues (2013) study on the application "Buddy" was more tailored to the behavioral problems in utilizing this technique. Their study sought to bring awareness of triggers in the environment that tend to cause a behavioral reaction which they substituted for pleasurable activities and lending support in dealing with the unfavorable stimuli. This may have made the treatment more credible for the participants. The current study was not as applied to the targeted behaviors as "Buddy" in creating a platform where individuals are able to reflect on themselves as well as substitute negative activities with positive activities.

This study also differed from that of Harris and colleagues (2007) because they waited a week to see if the response to cigarette warning packs would change, which proved effective in their study. This study was conducted all in one sitting so in the future, it might be beneficial to complete the intervention in a second sitting to allow the participants time to reflect on their values and see if the intervention is effective in a longer term.

In Armitage and Arden's (2016) study, participants were recruited from a university campus for course credit, thus giving participants a reason to be motivated. In this study, the participants were not compensated, and thus may not have been invested in taking the survey seriously. Future studies should find a way to motivate participants to ensure they finish the entirety of the survey. In future studies researchers can increase motivation by recruiting participants from an agency or in-person facility to incentivize the patients to complete it honestly and fully as several participants stopped answering halfway through this questionnaire. Motivation could have been increased by giving the participants a form of compensation whether

through cash or gift cards. If this study was given to college students, they could have been incentivized by course credit. Having a more obvious link between the intervention and the targeted behaviors, as discussed above, might also increase motivation as the intervention would be viewed by the participants as having the potential to help them alleviate some of their problematic symptoms. Also, the length of this study was potentially too long so future studies might want to reconsider the questionnaires and potentially decreasing the number of questions asked. A mistake was made in this research with the Dimensions of Identity Development Scale and the Identity Distress Survey in which the whole measure was included in the post-test. This resulted in 18 additional questions that were not necessary.

The dosage of the intervention in this study might have been too weak compared to other studies. Kessels and colleagues' (2016) asked participants to reflect on a core value and how it is significant to them in everyday life. This intervention did not ask the participants to place the significance of these values in their everyday lives. Instead, the participants were instructed to reflect on a time when they acted upon the value stated and how it made them feel. This potentially weakened the dosage of this intervention. Compared to Dulin and colleagues (2013) research on the application Buddy, this intervention did not substitute negative attitudes with positive activities which can be extremely effective and potentially increase the dosage of the intervention.

A flawed theoretical rationale could be another reason this study was not successful. Although self-affirmations work with other issues, it might be a possibility that it does not work with eating problems. However, all of the previously mentioned suggestions should be explored before giving up on this theory entirely, as the theoretical rationale remains strong.

While a lack of diversity might not contribute to the reason the intervention failed, it is important to note that it limits the generalizability of findings. This research had a lack of male participants. Future research should focus on having a more ethnically diverse population as well as recruiting more male participants.

As stated previously, there were several similarities and differences between this intervention compared to the ones discussed throughout this paper. Incorporating some of the tactics utilized by the other studies such as recruiting college students so they would be incentivized by course credit to complete longer survey batteries (alternatively, paying people for their research participation might also help in this regard), using a stronger intervention repeatedly over a longer period of time, or giving the participants a positive substitute for their negative activities might have made this intervention more effective.

Appendix A: IRB Approval

UNIVERSITY OF CENTRAL FLORIDA

Institutional Review Board
FWA00000351
IRB00001138, IRB00012110
Office of Research
12201 Research Parkway
Orlando, FL 32826-3246

EXEMPTION DETERMINATION

November 23, 2020

Dear Steven Berman:

On 11/23/2020, the IRB determined the following submission to be human subjects research that is exempt from regulation:

Type of Review:	Initial Study
Title:	Self-Affirmation and Eating Issues
Investigator:	Steven Berman
IRB ID:	STUDY00002454
Funding:	None
Grant ID:	None
Documents Reviewed:	• Control Group.docx, Category: Survey / Questionnaire; • Experimental Group.docx, Category: Survey / Questionnaire; • IRB Berman 2454 HRP-254 Explanation of Research.pdf, Category: Consent Form; • IRB Berman 2454 HRP-255 Request for Exemption.docx, Category: IRB Protocol; • Recruitment Materials 3.docx, Category: Recruitment Materials;

This determination applies only to the activities described in the IRB submission and does not apply should any changes be made. If changes are made, and there are questions about whether these changes affect the exempt status of the human research, please submit a modification request to the IRB. Guidance on submitting Modifications and Administrative Check-in are detailed in the Investigator Manual (HRP-103), which can be found by navigating to the IRB Library within the IRB system. When you have completed your research, please submit a Study Closure request so that IRB records will be accurate.

Due to current COVID-19 restrictions, in-person research is not permitted to begin unless you are able to follow the COVID-19 Human Subject Research (HSR) Standard Safety Plan with permission from your Dean of Research or submitted your Study-Specific Safety Plan and received IRB and EH&S approval. Be sure to monitor correspondence from the Office of

Research, as they will communicate when restrictions are lifted, and all in-person research can resume.

If you have any questions, please contact the UCF IRB at 407-823-2901 or irb@ucf.edu. Please include your project title and IRB number in all correspondence with this office.

Sincerely,

Kamille C. Birkbeck

Kamille Birkbeck
Designated Reviewer

Appendix B: Explanation of Research

UNIVERSITY OF CENTRAL FLORIDA

EXPLANATION OF RESEARCH

Title of Project: Self-Affirmation and Eating Issues

Principal Investigator: Dr. Steven L. Berman

Other Investigators: Stephanie Kaine, Bailey Wagaman

You are being invited to take part in a research study. Whether you take part is up to you.

The purpose of this study is to examine the effectiveness of utilizing self-affirming identity techniques amongst participants with eating issues.

You will be asked to complete an online survey that will include questions about eating behaviors, identity development, identity distress, and values. You will be randomly assigned to one of two slightly different surveys for comparison purposes.

The expected duration of your participation is approximately 10 minutes to complete the survey.

Your participation in this study is voluntary. You are free to withdraw your consent and discontinue participation in this study at any time without prejudice or penalty.

There is no direct compensation for taking part in this study.

No personal information will be collected beyond the basic demographic information collected at the beginning of the survey. All data collected will be stored in a password protected file and retained for a minimum of five years after study closure, per UCF guidelines.

You must be 18 years of age or older to take part in this research study.

ATTENTION: This survey contains questions that may cause you to reflect on past emotional events. If answering these questions has caused you to experience any kind of distress or made you feel uncomfortable in any way, please visit the UCF Counseling and Psychological Services at https://caps.sdes.ucf.edu/, or call them directly at (407) 823-2811, UCF Victim Services 24/7 number at (407) 823-1200, and/or call the National Suicide Prevention Lifeline, available 24/7 at 1-800-273-8255.

Study contact for questions about the study or to report a problem: If you have questions, concerns, or complaints, contact Dr. Steven L. Berman, Department of Psychology at (407) 708-2827or by email at steven.berman@ucf.edu.

IRB contact about your rights in this study or to report a complaint: If you have questions about your rights as a research participant, or have concerns about the conduct of this study, please contact Institutional Review Board (IRB), University of Central Florida, Office of Research, 12201 Research Parkway, Suite 501, Orlando, FL 32826-3246 or by telephone at (407) 823-2901, or email irb@ucf.edu.

I have read and understood the explanation of research above.

Appendix C: Descriptive Statistics

Table 1

Possible Range, Actual Range, Mean and Standard Deviations for All Measures.

	Possible Range	Actual Range	Mean	Standard Deviation
Eating Attitudes Pre-Test	1-6	1.19-5.42	3.89	1.05
Eating Attitudes Post-Test	1-6	1.92-5.5	3.93	.99
Eating Attitudes Behavior Pre-Test	1-6	1-5.5	2.57	1.18
Eating Attitudes Behavior Post-Test	1-6	1-5.5	2.69	1.15
Commitment Making Pre-Test	1-7	1-7	4.13	1.94
Commitment Making Post-Test	1-7	1-4.6	3.06	1.08
Exploration in Breadth Pre-Test	1-7	1-7	4.45	1.72
Exploration in Breadth Post-Test	1-7	1-4.8	3.38	.98
Average Distress Rating Pre-Test	1-5	1-3.43	2.42	.67
Average Distress Rating Post-Test	1-5	1-4	2.50	.60

Appendix D: Correlation Matrix

Table 2

Correlation Matrix for Study Variables

	Eating Attitudes Pre-Test	Eating Attitudes Behavior Pre-Test	Commitment Making Pre-Test	Exploration in Breadth Pre-Test
Eating Attitudes Pre-Test	-			
Eating Attitudes Behavior Pre-Test	.69**	-		
Commitment Making Pre-Test	-.13	-.04	-	
Exploration in Breadth Pre-Test	.00	.02	.66**	-
Average Distress Rating Pre-Test	.51**	.46*	-.02	.26

Note: *$p < .01$; **$p < .001$

Appendix E: Means and Standard Deviation for Pre and Post Measures by Group

Table 3

Means and Standard Deviation for Pre and Post Measures by Group

	Group	**Pre Mean (s.d.)**	**Post Mean (s.d.)**
Negative Eating Attitudes	Experimental	3.89 (.82)	3.74 (.92)
	Control	4.09 (.95)	4.08 (1.04)
Negative Eating Behavior	Experimental	2.62 (1.26)	2.58 (1.41)
	Control	2.78 (1.02)	2.80 (.95)
Identity Distress	Experimental	2.54 (.57)	2.48 (.60)
	Control	2.57 (.51)	2.51 (.62)
Identity Exploration	Experimental	4.74 (1.15)	3.35 (.78)
	Control	4.50 (1.82)	3.40 (1.16)
Identity Commitment	Experimental	4.46 (1.71)	3.09 (1.14)
	Control	4.20 (1.88)	3.03 (1.06)

Note: Experimental Group, $n = 19$, Control Group, $n = 23$

Appendix F: Survey

Demographic Information

Sex: Indicate your gender

- Male
- Female
- Transgender
- Other (explain)

Age: Type your age

Education:

- Have not completed high school
- High school graduate / GED
- Some college
- College graduate or higher

Ethnicity: Select the ethnic/ racial identifier that best describes you:

- White, non-Hispanic
- Black, non-Hispanic
- Hispanic or Latino/a
- Asian or Pacific Islander
- Native American or Alaskan Native
- Mixed ethnicity or Other (Specify)

Have you ever been diagnosed with an eating disorder or thought you might have an eating disorder that was never officially diagnosed?

- No
- Yes
  Please specify which one(s): _____

Which of the following statements best describes you?

- I currently have an eating disorder or eating problem
- I am in recovery/recovered from having an eating disorder or eating problem
- I have never had an eating disorder or eating problem

Eating Attitudes Test (EAT-26)

Part B: Please check a response for each of the following statements.

	Always	**Usually**	**Often**	**Sometimes**	**Rarely**	**Never**
1. Am terrified about being overweight.						

2. Avoid eating when I am hungry.
3. Find myself preoccupied with food.
4. Have gone on eating binges where I feel that I may not be able to stop.
5. Cut my food into small pieces.
6. Aware of the calorie content of foods that I eat.
7. Particularly avoid food with a high carbohydrate content (i.e. bread, rice, potatoes, etc.)
8. Feel that others would prefer if I ate more.
9. Vomit after I have eaten.
10. Feel extremely guilty after eating.
11. Am preoccupied with a desire to be thinner.
12. Think about burning up calories when I exercise.
13. Other people think that I am too thin.
14. Am preoccupied with the thought of having fat on my body.
15. Take longer than others to eat my meals.
16. Avoid foods with sugar in them.
17. Eat diet foods.
18. Feel that food controls my life.
19. Display self-control around food.
20. Feel that others pressure me to eat.
21. Give too much time and thought to food.
22. Feel uncomfortable after eating sweets.
23. Engage in dieting behavior.
24. Like my stomach to be empty.
25. Have the impulse to vomit after meals.
26. Enjoy trying new rich foods.

Part C: Behavioral Questions.
In the past 6 months have you:

Never	Once a month or less	2-3 times a month	Once a week	2-6 times a week	Once a day or more

A. Gone on eating binges where you feel that you may not be able to stop?
B. Ever made yourself sick (vomited) to control your weight or shape?
C. Ever used laxatives, diet pills or diuretics (water pills) to control your weight or shape?
D. Exercised more than 60 minutes a day to lose or to control your weight?
E. Lost 20 pounds or more in the last 6 months?
    a. Yes
    b. No

DIMENSIONS OF IDENTITY DEVELOPMENT SCALE (DIDS):
Please identify to what degree you relate to the following statements.

1	2	3	4	5	6	7

Strongly disagree	Disagree	Slightly disagree	Unsure	Slightly agree	Agree	Strongly Agree

1. I have decided on the direction I am going to follow in my life.
2. I have plans for what I am going to do in the future.
3. I know which direction I am going to follow in my life.
4. I have an image about what I am going to do in the future.
5. I have made a choice on what I am going to do with my life.
6. I think actively about different directions I might take in my life.
7. I think about different things I might do in the future.
8. I am considering a number of different lifestyles that might suit me.
9. I think about different goals that I might pursue.
10. I am thinking about different lifestyles that might be good for me.

IDENTITY DISTRESS SURVEY (IDS):
To what degree have you recently been upset, distressed, or worried over any of the following issues in your life? (Please select the appropriate response, using the following scale).

None at all	Mildly	Moderately	Severely	Very Severely
1	2	3	4	5

1. Long term goals? (e.g., finding a good job, being in a romantic relationship, etc.)
2. Career choice? (e.g., deciding on a trade or profession, etc.)
3. Friendships? (e.g., experiencing a loss of friends, change in friends, etc.)
4. Sexual orientation and behavior? (e.g., feeling confused about sexual preferences, intensity of sexual needs, etc.)
5. Religion? (e.g., stopped believing, changed your belief in God/religion, etc.)
6. Values or beliefs? (e.g., feeling confused about what is right or wrong, etc.)
7. Group loyalties? (e.g., belonging to a club, school group, gang, etc.)

Promotion Affirmation (revised)

Below is a list of values, some of which may be important to you, some of which may be unimportant. Please read carefully over this list and think about each of these values. Then, rate these values as to the extent to which they reflect your hopes and aspirations.

1	2	3	4	5	6	7
Strongly disagree	Disagree	Slightly disagree	Unsure	Slightly agree	Agree	Strongly Agree

- I value creativity.
- I value athletics.
- I value hobbies.

- I value loyal.
- I value family
- I value control.
- I value appearance.
- I value relationship.
- I value living life in the moment.
- I value self-care.
- I value religion.
-

Please indicate a time where you acted upon the value stated and how it made you feel.

-Demonstrate/ Received loyalty
-Felt good about my personal appearance
-Values my relationships
-Invested in self-care
-Living life in the moment
-Felt a connection/ disconnection to my religion.

CREATURE OF HABIT SCALE, FOOD (COHSF)

1	2	3	4	5	6	7
Strongly disagree	**Disagree**	**Slightly disagree**	**Unsure**	**Slightly agree**	**Agree**	**Strongly Agree**

1. I have a preferred sandwich that I always pick.
2. I tend to plan meals days in advance.
3. I usually eat at certain times of the day, even when I am on holiday.
4. I like to finish meals either with something sweet or something savoury.
5. I quickly get bored of preparing the same dishes over and over again.
6. I usually sit at the same place at the dinner table.
7. I always follow a certain order when preparing a meal.
8. I like to eat some foods in a certain way (e.g. I eat the pizza crust first or cut up all the meat on the plate in one go).
9. I always add salt before tasting food.
10. It feels odd not having both a knife and fork for eating meals.
11. I normally buy the same foods from the grocery store.

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