
The Journal of Undergraduate Psychological Research

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The Journal of Undergraduate Psychological Research

5 **POSITIVE INNOVATION THROUGH RESEARCH (EDITOR'S NOTE)**

Monaliza Martinez-Louzada

6 **THE EFFECTS OF GENDER AND COMEDIC INTENTION ON THE APPRECIATION OF SEXIST HUMOR**

Brittney Romagna

18 **TREATING PTSD RELATED TO SEXUAL ABUSE WITH DIALECTICAL BEHAVIOR THERAPY AND EXPOSURE**

Fatima A. Aviles

26 **TREATING SOCIAL ANXIETY DISORDER WITH EXPRESSIVE WRITING THERAPY**

Paula Trabanco

36 **EFFECTS OF ACCENTS ON PERCEIVED EDUCATION**

Brunella A. Trotta & Katherine M. Joseph

44 **DRIVEN EXERCISE, FAMILY BASED THERAPY, AND IDEAS FOR FUTURE RESEARCH ON ANOREXIA NERVOSA IN TEENS AND ADOLESCENTS**

Matthew Kaestli

Positive Innovation through Research

MONALIZA MARTINEZ-LOUZADA

Psychological research can serve various functions, such as bringing deeper insight to societal issues. Systematic investigations can reveal root causes, and point to solutions benefitting individuals, interpersonal relationships, as well as the greater community. These outcomes can improve our mental and physical health. Rising stress levels combined with the recent political unrest and tense, at times violent, relations in this country demand a need for mending through positive change, productive dialogue, and policy refinement. The field of psychology is poised to help. The presentations within this volume are prime examples in the power of scientific methodology.

Scholarly inquiries play an important role in the examination and increased awareness of societal challenges. The six featured papers here address ethnic discrimination, sexism, and therapies for various psychological disorders. New research sheds light on how we perceive others speaking with foreign accents, an often overlooked contributing factor to racial stereotypes. Sexist humor was shown to normalize gender inequality, and may even influence sexually violent attitudes. Revealing the mechanisms behind these issues brings awareness and directs appropriate resolutions based on empirical evidence.

Also in this issue, treatment plans were examined for mental disorders. The contributing authors present the current state of PTSD (posttraumatic stress disorder), social anxiety disorder, and anorexia in society. Current therapeutic strategies were evaluated, and new ones proposed. Commonality of approach

centered on anxiety reduction, emotional health, and self-regulation. Refreshingly, medications receded from the conversation. While pharmaceutical interventions are important, alternatives must also be fully developed and considered. Improving emotional intelligence may directly reach the underlying cause, or result in practical life-long skills to navigate through daily challenges and experiences.

Arguably, we all could benefit from an optimal mindset, regardless of circumstance. Anxiety, stress, and depression are becoming more prevalent in adolescence and beyond. The American Psychological Association, for instance, recommends mindfulness training for greater mental health. Simply being more aware and practicing purposeful action can reduce distraction and stress levels. Proper self-care, like regular exercise and healthier eating, can also have tremendous effects on our well-being.

The scientific process in this field can lead to understanding of mind and behavior. We want effective solutions guided by formal, unbiased evaluations of available data. Sound research models and the development of new theories will advance the field of psychology, and hopefully, the progress within self and society.

OUTSTANDING PAPER

The Effects of Gender and Comedic Intention on the Appreciation of Sexist Humor

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Abstract

Research has positively related men's exposure to sexist humor to rape-related attitudes (Ryan & Kanjorski 1998) and the performance of discriminatory behavior (Ford et al. 2008). The influences of gender and comedic intention on the appreciation of sexist humor were examined in the current study. Undergraduate students ($n = 38$) rated the perceived funniness, sexism and offensiveness

of sexist cartoons. Both genders rated antisocial (reinforcing) sexist humor as more offensive and sexist and less funny than prosocial (subversive) sexist humor. Future research is needed to examine the interaction between comedic intention and attitudinal disposition on the appreciation of sexist humor.

As cellular devices advance and adapt to the increasing demand for communicatory applications, we are faced with a new social platform that propagates sexist ideas and popularizes beliefs (Shirky, 2011). The use of applications such as Instagram, Twitter and Facebook exposes both male and female consumers to sexist cartoons and female-disparaging humor that is “liked” and “shared” via these social tools. With social media’s amplification of the exposure to chauvinistic jokes and cartoons, there is a sudden and pressing demand to unravel the undertones and interpretations of sexist humor as well as its implications. Early research on the judgment of sexist cartoon humor found that males are not the sole proponents of sexist humor; women also prefer jokes that target women as opposed to jokes that target men (Cantor, 1976; Losco & Epstein, 1975).

The understanding of gender differences and the perceived intent of sexist humor on the acceptance of the underlying ideology has real-world implications (Ford et al., 2008; Viki, Thomaes, Cullen, & Fernandez, 2007; Ryan & Kanjorski, 1998; Bill & Naus, 1992). In recent studies, mere exposure to sexist humor has been shown to increase men’s willingness to allocate higher budget cuts to women’s organizations (Ford et al., 2008) and men’s like-

lihood to blame rape victims (Viki, Thomaes, Cullen, & Fernandez, 2007). Research positively correlated men’s exposure to sexist humor to rape-related attitudes (Ryan & Kanjorski, 1998) and the actual performance of negative, discriminatory behavior (Ford et al., 2008). In a study on campus sexual assault, 13.7% of undergraduate women reported being the victim of at least one completed sexual assault since entering college (Krebs et al., 2007). This statistic expresses the importance of understanding the underlying beliefs that result in sexually violent behaviors toward women. Sexist humor serves as a social tool used in the normative tolerance of sexist attitudes (Bill & Naus, 1992). Understanding the finer nuances behind the enjoyment of sexist humor might aid in preventing instances of discriminatory and sexually violent behaviors.

While studies revealed that both men and women prefer female disparaging humor (Cantor, 1976; Losco & Epstein, 1975), these claims have been widely challenged by other researchers. *The Psychology of Humor* (Martin 2006) cites that the jokes and cartoons used in these studies are considered by researchers to be an uncommon source of daily humor, lacking in social situation compared to verbal, spontaneous humor (Graeven & Morris, 1975; Martin & Kuiper, 1999). The most compelling point

against Cantor's (1976) and Losco and Epstein's (1975) studies is characteristic of life in the late-seventies to mid-nineties. The presumed irrelevance of cartoon humor (Graeven & Morris 1975; Martin & Kuiper, 1999) used in previous research (Cantor 1976; Losco & Epstein, 1975) has become increasingly outdated in the new media age.

Today, social media users are exposed to jokes and cartoons in a newly common social context. An opportunity has been granted by the rise of social media to revisit the use of sexist cartoons (now, "memes") in a deliberate and grounded research design. The current study has selected sexist jokes that typically circulate throughout social media sites, representing two comedic intentions (antisocial or prosocial), and presented them to male and female participants. While comedic intention has been examined in terms of racist humor (Saucier, O'Dea & Strain, 2016), there has been little research regarding the effects of the comedic intention of sexist humor on an individual's appreciation of the joke. In response, models used in research on the appreciation of racist humor (Saucier et al., 2016) have been adapted for this study.

Examining the appreciation of sexist humor as a function of comedic intention is an unprecedented approach. While jokes may seem inherently sexist at face value, their respective interpretations are likely dependent on the perceived comedic intention behind each joke. An antisocial comedic intention serves to reinforce sexist stereotypes against women while a prosocial comedic intention is used to combat these stereotypes (Rappoport, 2005; Saucier et al., 2016). Instead of utilizing sexist cartoons, the current study presented stimuli characteristic of the modern media which participants are regularly exposed to (Shirky, 2011). By selecting ten typical sexist images from social media sites, the concerns of presenting natural and spontaneous sexist humor are addressed (Martin & Kuiper, 1999; Graeven & Morris, 1975). The images selected either expressed antisocial or prosocial sexist humor.

Research has shown that sexist jokes (e.g. A man and a woman were in the elevator and they knew they were gonna die. The woman turns to the man and says, 'Make me feel like a woman before I die.' So he takes off his clothes and says, 'Fold them!') are rated as more sexist but equally as funny as neutral jokes presented to participants (Ford et al., 2001). When participants were presented with statements expressing the same sexist ideology without a humorous component (e.g. 'I still say that a woman's place is in the home and it's a woman's role to do domestic duties such as laundry for a man.'), they rated the statement as less funny but not more sexist. Ford et al. (2001) considered that with the presence of a humorous component, sexism is still identifiable, but it need not be taken seriously; therefore, it is rated as funnier by participants. The present study has replicated this (2001) approach to understanding the tolerance of sexism. Thus, the approach of measuring the acceptance of sexist ideology through the use of sexist humor has been adapted. Unique to this study were the dependent variables, perceived offensiveness and sexism, which speak to the acceptance of the underlying ideology.

While it would seem intuitive that the sole proponent of female-degrading humor would be males, that simply is not the case (Henkin & Fish 1986). Both men and women prefer female-disparaging humor above male-disparaging humor (Abrams & Bippus, 2014). Sexist humor is perceived to be funnier when the originator, or person telling the joke, is not a member of the group being put down (Duncan et al., 1990). These perceptions are relevant to the current study, as it will be natural for participants to assume that the originator of antisocial sexist humor (e.g. What is easier to pick up the heavier it gets? Women.) is a man, while the originator of prosocial sexist humor (e.g. Studies show that women who carry a little extra weight live longer than those who mention it.) is a woman. This may play a role in the preference of jokes across comedic intentions.

Based on Tajfel's (2010) social identity theory, women should reject discriminatory humor as it serves to demean their self-image. However, several studies have reported findings of women rating sexist humor similar to men (Henkin & Fish, 1986; Abrams & Bippus, 2014; Bill & Naus, 1992; Ryan & Kanjorski, 1998). This is at variance with Tajfel's (2010) theory that social groups serve as a powerful source of identity and self-esteem. However, some studies have reported gender differences in the appreciation of sexist humor (Love & Deckers, 1989; Ryan & Kanjorski, 1998). A study on humor appreciation as a function of sexual, aggressive, and sexist cartoon content found that sexist values were negatively correlated with perceived funniness for female participants, while sexual content was positively correlated with perceived funniness for male participants (Love & Deckers, 1989). A possible explanation for these gender differences could be that sexual content often cites women as the sexual object, thereby objectifying and shaming female participants. This has the potential to incite feelings of vulnerability and inferiority, disallowing the enjoyment of any humorous components. Even though women tend to rate sexist humor as less funny than males (Love & Deckers, 1989; Ryan & Kanjorski, 1998), they are not significantly less likely to tell sexist jokes (Ryan & Kanjorski, 1998). These findings contradict previous research, and indicate that sexual, aggressive, and sexist values work together to influence an individual's perception and appreciation of sexist humor based on their gender.

The current study aimed to amalgamate the approaches of prior research in order to understand the subtle, underlying attitudes that affect the perception of sexist humor. While there have been inconsistencies in past research on gender and the perception of sexist humor (Henkin & Fish, 1986; Abrams & Bippus, 2014; Bill & Naus, 1992; Love & Deckers, 1989; Ryan & Kanjorski, 1998), the effects of gender and comedic intention on an individual's appreciation of sexist humor have yet to be exam-

ined. This study intended to address the gap in sexist humor research by presenting participants with images found on social networking sites that represent two types of comedic intentions, and then recording perceived funniness, offensiveness, and sexism. The preference of prosocial versus antisocial sexist humor across gender was examined in an attempt to better understand what comedic hallmarks are valued by each gender. The comedic intention of prosocial sexist humor is to debase the patriarchy in modern society and promote a connection among members of the group being targeted (Rappoport, 2005; Saucier et al., 2016). This acts as a shield against the indignation of women (Rappoport, 2005). Antisocial sexist humor serves to reinforce sexist stereotypes and perpetuate the unfair treatment of women. By use of the shield metaphor, antisocial sexist humor would be the sword (Rappoport, 2005). It is hypothesized that the assimilating function of prosocial sexist humor will be strengthened among female participants as opposed to male participants, since their gender will be bolstered by the prosocial effects of the joke. Therefore, women are expected to rate prosocial sexist humor as funnier, less offensive, and less sexist than male participants. The interpretation of sexist humor as a prosocial tool may explain women's preference for female disparaging humor found by Abrams and Bippus (2014). It is hypothesized that gender identification among women will strengthen the alienating function of antisocial sexist humor that is meant to target women, decreasing a woman's preference for the joke and resulting in an inverse response.

Method

PARTICIPANTS

A convenience sample of 38 undergraduate students was selected on the campus of a public northeastern university. There were 13 males and 25 females, with the majority falling in the 18-25 age range.

Participants were recruited through a flyer posted on a bulletin board in the psychology department. As an incentive, participants earned credit towards their participation requirement for the psychology department.

DESIGN

This experiment used three separate mixed model repeated measures analyses of variances to examine the effects of gender and comedic intention on the appreciation of sexist humor, as measured by funniness, sexism, and offensiveness ranked on a six-item scale.

MATERIALS

A packet containing antisocial and prosocial sexist jokes was administered to participants (see Appendix A for complete sexist jokes). All images used were obtained from social media sites, randomized in order, and printed. The undergraduate students rated the images in terms of perceived funniness, sexism and offensiveness using pen and paper.

PROCEDURE

Each participant signed an informed consent form before participating in the experiment. Once the form was collected, participants were handed a packet asking basic demographic information and containing ten sexist jokes (5 prosocial, 5 antisocial) which they were asked to rate in terms of perceived funniness, sexism and offensiveness. The prosocial sexist jokes that were selected for this study presented sexist ideology in a satirical manner. Prosocial sexist jokes did not express a threat of sexual oppression while the antisocial sexist jokes selected each had degrading and oppressive undertones that either objectified or insulted women. Individual joke appreciation was rated on a six-item scale (Appendix A) with 1 representing “not at all” and 6 representing “very.” Participants were instructed to answer as honestly as possible and were reminded that there are no wrong answers, only opinions. Once the packet

was completed, participants were asked to fill out a form for extra credit and were thanked for their time and participation in the research.

Results

A 2×2 mixed factorial ANOVA on perceived funniness of sexist humor was conducted with gender (male, female) as the between subjects factor and comedic intention (prosocial, antisocial) as the within subjects factor. The results showed a significant main effect for comedic intention, $F(1, 36) = 7.15, p < 0.05$, partial $\eta^2 = 0.17$ on the perceived funniness of sexist humor (See Table 1). Both males and females found sexist humor with prosocial comedic intention ($M = 18.74, SD = 5.32$) to be more funny than sexist humor with antisocial comedic intention ($M = 15.47, SD = 6.59$). There was no significant main effect for gender, $F(1, 36) = 0.65, p > 0.05$, partial $\eta^2 = 0.02$, and there was no gender \times comedic intention interaction, $F(1, 36) = 2.02, p > 0.05$, partial $\eta^2 = 0.05$.

A separate 2×2 mixed factorial ANOVA on perceived offensiveness of sexist humor was conducted with gender as the between subjects factor and comedic intention as the within subjects factor. These results also showed a significant main effect for comedic intention, $F(1, 36) = 103.49, p < 0.05$, partial $\eta^2 = 0.74$. Both males and females found antisocial sexist humor ($M = 19.76, SD = 6.35$) to be more offensive than prosocial sexist humor ($M = 12, SD = 4.37$). There was no significant main effect for gender, $F(1, 36) = 0.10, p > 0.05$, partial $\eta^2 = 0.00$, or gender \times comedic intention interaction, $F(1, 36) = 2.37, p > 0.05$, partial $\eta^2 = 0.06$.

Finally, a 2×2 mixed factorial ANOVA on perceived sexism was conducted with gender as the between subjects factor and comedic intention as the within subjects factor. These results also showed a significant main effect for comedic

intention, $F(1, 36) = 77.63, p < 0.05$, partial $\eta^2 = 0.68$. Both males and females found antisocial sexist humor ($M = 20.79, SD = 6.16$) to be more sexist than prosocial sexist humor ($M = 13.82, SD = 5.25$). There was no significant main effect for gender, $F(1, 36) = 0.90, p > 0.05$, partial $\eta^2 = 0.02$, or gender \times comedic intention interaction, $F(1, 36) = 1.34, p > 0.05$, partial $\eta^2 = 0.04$.

Discussion

The present study examined how gender and comedic intention affected participants' appreciation of sexist humor by measuring perceived funniness, sexism and offensiveness on a six-item scale. Both male and female participants found prosocial sexist humor to be funnier than antisocial sexist humor. Participants found antisocial sexist humor to be more offensive and sexist than prosocial sexist humor. Overall, male participants rated sexist humor as significantly funnier than female participants.

The first hypothesis, which speculated that the assimilating function of prosocial sexist humor would be strengthened among female participants as opposed to male participants, since their gender will have been bolstered by the prosocial effects of the joke, was only partially supported. While females preferred prosocial sexist humor over antisocial sexist humor, unexpectedly, male participants were also put off by the degrading and insulting nature of antisocial sexist humor.

While the second hypothesis was technically supported, stating that women would object to the alienating qualities of antisocial sexist humor that is meant to target their gender, male participants also rated antisocial sexist humor as less funny. Participants, regardless of gender, rated antisocial sexist humor as significantly less funny than prosocial sexist humor. This may be the result of a profeminist attitudinal disposition towards women

among male participants. This viewpoint has been shown to decrease an individual's appreciation of female-disparaging humor (Moore et al., 1987). While negative associations with feminism have been recorded (Bolotin, 1982; Renzetti, 1987), a correlational study found that attitudes toward feminism among male college students were uncharacteristically favorable, especially for those who were more feminine (Jackson, Fleury & Lewandowski 1996). The current results suggest that the predominance of profeminist, liberal viewpoints among male college students (Jackson, Fleury & Lewandowski, 1996) may manifest themselves in their gender attitudes and appreciation of sexist humor. Further research will have to examine the potential interactions among attitudinal disposition, participant femininity, and comedic intention on the appreciation of sexist humor.

While both males and females have been previously shown to prefer female disparaging humor above male disparaging humor (Cantor, 1976; Losco & Epstein, 1975), the results of this study found that both males and females prefer prosocial sexist humor above antisocial sexist humor. This is to say, both genders found jokes with an uplifting, subversive undertone to be funnier than jokes meant to reinforce sexist stereotypes. Though the current study did not examine male disparaging humor, as others did (Cantor, 1976; Losco & Epstein, 1975), it has delved deeper in examining female disparaging humor. These findings make a unique contribution to existing research on the appreciation of sexist humor by examining the comedic intention behind the jokes being presented. Prosocial sexist humor is inherently less disparaging to females than antisocial sexist humor and, as such, rendered more positive responses. These subtle differences in comedic intention that have been otherwise overlooked in previous research may contribute to the discrepancy between gender differences among studies on the appreciation of sexist humor (Henkin & Fish, 1986; Abrams & Bippus, 2014; Bill & Naus, 1992; Love & Deckers, 1989; Ryan & Kanjorski, 1998).

The results here are in line with the lack of gender differences in some past research (Henkin & Fish, 1986; Abrams & Bippus, 2014; Bill & Naus, 1992; Ryan & Kanjorski, 1998), and they also help to explain the gender differences found in other studies (Love & Decker, 1989; Ryan & Kanjorski, 1998).

The antisocial sexist jokes presented in the current study were rather innocuous. Exposure to more severely sexually threatening humor (Love & Decker, 1989) may incite varying responses across gender. The use of more explicitly threatening sexist jokes may amplify the effect of female disapproval for antisocial humor, while the allure of sexual objectification counterbalances this effect for males. Moreover, differences in gender attitudes and feminist beliefs among participants may be responsible for the disparity in gender differences.

A number of future directions could be taken to address the theoretical questions that remain regarding the effect of men's attitudinal disposition on their appreciation of both prosocial and antisocial sexist humor. One possible direction would be to administer the Attitudes Towards Women scale prior to the participants' rating of sexist images (Spence & Helmreich, 1990). This may reveal interactions between additional disposition and appreciation of sexist humor across gender and comedic intention. Examining the differences across students with profeminist versus traditional attitudes towards women may unfold another layer of determinates in the appreciation of sexist humor (Jackson, Fleury & Lewandowski, 1996). Another direction would be to have the participants watch a video clip illustrating a conservative, traditional woman, followed by a clip illustrating a profeminist, egalitarian woman and rate these women on likability. This approach would speak to the implicit prejudice of each participant that may motivate distinct responses. These two options would uncover the effect of individual attitudes towards women on the appreciation of sexist humor.

Future research is also needed to investigate how natural the social context of sexist images is perceived to be by participants. As stated earlier, social media users are exposed to jokes and cartoons, like the images used in this study, on a daily basis. A survey might be administered post-experiment inquiring on the likelihood that participants would naturally be exposed to images like the ones presented during this experiment. This would address the skepticism expressed in *The Psychology of Humor* (Martin 2006) regarding the social situation and spontaneity of the jokes (Graeven & Morris, 1975; Martin & Kuiper, 1999).

In conclusion, the present study has identified a significant effect of comedic intention on the appreciation of sexist humor. Prosocial sexist humor was significantly preferred, as it was rated as funnier, less offensive and less sexist than antisocial sexist humor. It was also found that men and women rated the jokes similarly. These findings have added to the discussion of sexist humor, citing prosocial and antisocial comedic intentions as significant factors in the appreciation of sexist humor. Humor that blatantly reinforces sexist stereotypes and slanders women was rejected by both male and female participants. By contrast, humor that brings to attention the unfair treatment of women in society and uses sarcasm to question sexist beliefs was rated more favorably. To aim to identify the risk of sexually violent behaviors among college students by use of sexist humor ratings would be nonfunctional without the consideration of these two distinct comedic intentions. These fine spun underpinnings should not be ignored in the reports and interpretations of sexist humor preference. Instead, consolidating the images and jokes used in future research to only antisocial sexist humor would weed out any potential confounds in the identification of alarming, chauvinistic and malignant prejudices toward women.

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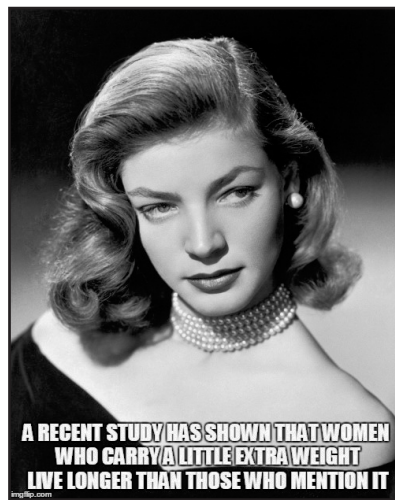
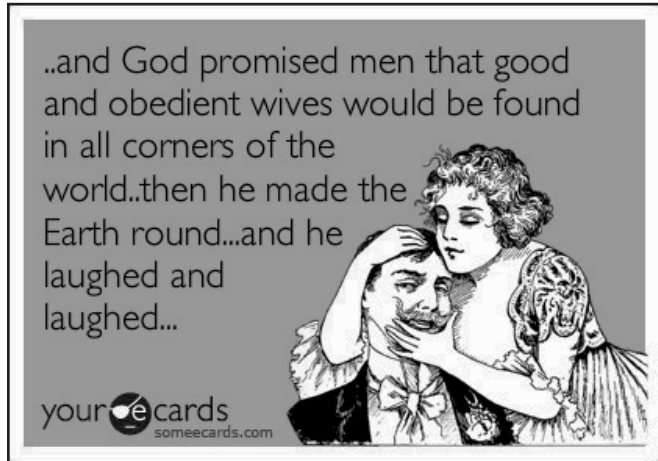
Viki, G. T., Thomaes, M., Cullen, A., & Fernandez, H. (2007). The effect of sexist humor and type of rape on men's self-reported rape proclivity and victim blame. *Current Research in Social Psychology*, 13(10), 122-132.

Appendix A

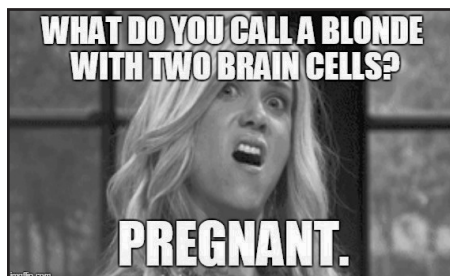
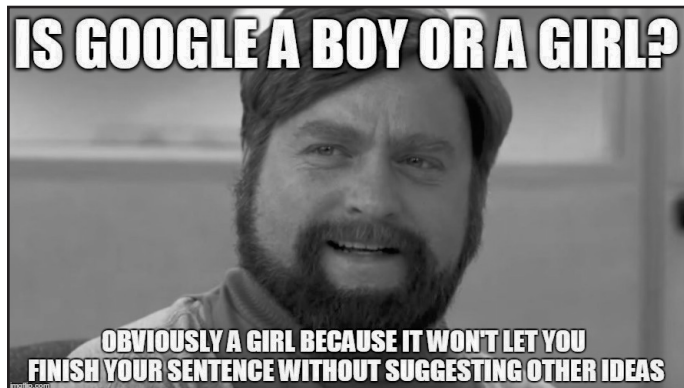
The statements below each image indicate varying responses to the joke presented above. Please express your feelings by circling the number that best reflects your response. There are no right or wrong answers, only opinions.

Funniness				
1	2	3	4	5
Not at all funny		Moderately funny		Very funny
Offensiveness				
1	2	3	4	5
Not at all offensive		Moderately offensive		Very offensive
Sexism Scale				
1	2	3	4	5
Not at all sexist		Moderately sexist		Very sexist

PROSOCIAL SEXIST IMAGES:



ANTISOCIAL SEXIST IMAGES:



DEMOGRAPHIC INFORMATION

Gender: _____

Age (circle one): 18–25 26–35 36–45 46–55 56+

Table 1: Descriptive Statistics for Sexist Humor Appreciation

	Male		Female	
	PROSOCIAL <i>M (SD)</i>	ANTISOCIAL <i>M (SD)</i>	PROSOCIAL <i>M (SD)</i>	ANTISOCIAL <i>M (SD)</i>
FUNNINESS	18.69 (4.15)	17.38 (6.69)	18.76 (5.93)	14.48 (6.45)
OFFENSIVENESS	11.54 (3.77)	20.92 (5.96)	12.24 (4.71)	19.16 (6.57)
SEXISM	12.08 (3.88)	20.31 (6.89)	14.72 (5.70)	21.04 (5.88)

Treating PTSD Related to Sexual Abuse with Dialectical Behavior Therapy and Exposure

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Abstract

Post-traumatic stress disorder (PTSD) is an anxiety disorder that develops in some people after an extremely traumatic event. PTSD related to sexual abuse is very common among female college victims. If PTSD is left without treatment; it can cause immediate or long-term chronic physical and psychological consequences as well as suicide. In this paper, the effects of dialectical behavior therapy (DBT) and prolonged exposure (PE) on PTSD are reviewed. This review indicated that DBT and PE are effective treatments for PTSD related to sexual abuse in female college victims.

The fifth edition of *Diagnostic and Statistical Manual of Mental Disorders* (American Psychological Association, 2013) describes post-traumatic stress disorder (PTSD) as an anxiety disorder that develops in some people after a direct or indirect exposure to extremely traumatic events. Such events vary from actual or threatened death, serious injury or car accidents, natural disasters, terrorist attacks, combat violence, domestic violence, and sexual, physical or verbal abuse. The person affected can be directly involved, can witness the event, can experience an expose of details of the traumatic event, or can be exposed from a close family member or a close friend. The traumatic event is then relived via unwanted memories, flashbacks or nightmares, and cause psychological distress such as: negative thoughts, negative feelings or negative mood.

Post-traumatic stress disorder interrupts and distresses everyday life (Blevins, Weathers, Davis, Witte, & Domino, 2015). The DSM-V states that it is associated with high levels of impaired functioning across social, interpersonal, developmental, educational, physical health, and occupational domains as well as poor social and family relationships, absenteeism from work, lower income, and lower educational and occupational success. It can also

provoke aggressive self-destructive behavior, sleep disturbances, and extreme fear of events, places or people that could remind the person of the traumatic event. The symptoms are a result of an instinctive survival response intended to help us survive or prevent further traumatic experiences.

One of the most common causes of PTSD in students was physical and sexual abuse (Kataoka, Langley, & Wong 2012). PTSD related to sexual abuse is a public health and public safety issue and PTSD related to sexual abuse is very common among college victims. The earlier the intervention, the better clinicians can help students to improve their social-emotional well-being and their academic performance in the classroom.

As mentioned before, one type of traumatic event that causes PTSD is sexual abuse. The American Psychology Association (2013) describes sexual abuse as an unwanted forced activity, unwanted non-physical contact such as voyeurism and exhibitionism, making threats or taking advantage of victims not able to give consent. Krebs, Lindquist, Warner, Fisher, and Martin (2007) conducted a college sexual assault study from January 2005 through December 2007. They used the term sexual abuse or sexual assault to describe forced or

unwanted sexual activity that includes unwanted physical contact such as kissing, groping and rape. Their findings reported that one in five women and one in sixteen men are sexually assaulted while in college. 150,000 students from 27 different universities across the United States participated in a survey by the White House Task Force to protect students from sexual assault where they were asked about sexual assault. The results reported that one in five college students experiences sexual assault during their college career (Westat, Westat, Westat, & Westat, 2015). Immediate reactions to sexual abuse include shock, fear or disbelief. Long-term symptoms include anxiety, fear or post-traumatic stress disorder (American Psychological Association, 2013).

Dialectical behavioral therapy (DBT) is a cognitive behavioral treatment developed to treat chronically suicidal individuals diagnosed with PTSD, substance dependence, depression, eating disorders and borderline personality disorder (Robins and Rosenthal, 2011). The National Center for PTSD describes various treatment strategies for PTSD, including: cognitive processing therapy, stress inoculation training, eye movement desensitization and reprocessing, disaster mental health treatment and dialectical behavioral therapy, and prolonged exposure therapy. When sexual abuse victims experience PTSD related to this traumatic event, their quality of life can be affected because of life-threatening behaviors. DBT teaches clients to regulate their emotions, to reduce self-destructive behaviors that derive from extreme emotions caused by anxiety, distress tolerance, interpersonal effectiveness, and mindfulness (Becker & Zayfert, 2001).

The effectiveness of DBT reducing severe and chronic PTSD in victims related to sexual abuse has been well-documented (Roth, Newman, Pelcovitz, Kolk, & Mandel, 1997; Harned & Linehan, 2008; Foa, Rothbaum, Riggs & Murdock, 1991; Steil, Dyer, Priebe, Kleindienst & Bohus, 2011; Kimbrough, Magyari, Chesney, & Berman, 2010;

Becker & Zayfert, 2001). Techniques used in DBT significantly reduced anxiety, emotion dysregulation, suicidal thoughts and self-injury (Steil, Dyer, & Priebe, 2011). DBT has four components: skills training group, individual treatment, phone coaching, and consultation team. Evidence presented in the articles later reviewed in this document, showed that DBT is one of the most promising therapies for PTSD. It should be further developed and included in education awareness for PTSD patients.

Prolonged Exposure (PE) Therapy is often included together with DBT as treatment for PTSD (Harned & Linehan, 2008). PE is a cognitive behavioral therapy that teaches patients to slowly approach related memories, feelings, and situations that they have avoided since when the occurrence of the experience (Foa, Hembree, & Rothbaum, 2007). There are four main components of PE: a) psychoeducation about PTSD and PE, b) breathing retraining, c) in-vivo exposure and d) imaginal exposure. Nonetheless, PE does not work for patients that do not tolerate the treatment and instead symptoms worsen because of this type of treatment (Krüger, Ehring, Priebe, Dyer, Steil, & Bohus, 2014). If PE therapy is used as treatment together with DBT, symptoms of PTSD will decrease faster than using the two treatments on their own. Victims will be able to endure their PTSD episodes in a much better way instead of having their symptoms worsening, since DBT has been shown to be successful in improving the patient's tolerance of the exposure treatment (Becker & Zayfert, 2001). DBT will help patients to reduce anxiety, regulate emotions, decrease suicidal thoughts, decrease self-injuring and increase self-confidence and self-esteem before advancing to PE (Hembree, Rauch, & Foa, 2003).

Employing both DBT and PE has been shown to reduce PTSD symptoms in some populations (Kimbrough, Magyari, Chesney, & Berman, 2010; Harned & Linehan, 2008). DBT can be effective at helping an individual regulate their emotions, reduce and control physical symptoms occurring

when patients have anxiety attacks or flashbacks are triggered. Since PE can be a challenging therapy, coupling it with DBT may facilitate the therapeutic process. This paper found strong evidence of the effectiveness of DBT and PE therapies in PTSD related to childhood sexual abuse and sexual abuse in college female students. DBT and PE have been shown to effectively decrease symptoms faster than when using the two treatments separately. It will be argued that this approach should be considered *more* in helping female college students with PTSD symptoms. This review evaluatee DBT and PE in this target population.

Literature Review

The following review evaluated the interaction between PE and DBT, and their relation to treating PTSD found in female sexual abuse victims. PTSD related to sexual abuse has been studied by researchers Roth, Newman, Pelcovitz, Kolk, and Mandel (1997). They asked participants if they were sexually or physically abused at any point in their lives. Then, they were categorized per type of abuse; physical, sexual, or both, duration of abuse; acute or chronic and the onset of abuse; early or late per their answers. They found that sexually abused women, especially those who also were exposed to physical abuse, had a higher risk of developing PTSD symptoms. Their results also suggested that physical and sexual abuse are risk factors for Complex PTSD (the lifetime diagnosis of PTSD) among women. However, when sexual abuse was combined with physical abuse women had a greater risk than physical abuse alone to develop complex PTSD or PTSD symptoms. Roth et al. (1997) indicated that people suffering from sexual or physical abuse have a greater risk of developing PTSD.

One of the most common treatments for PTSD is PE. PE is an exposure therapy program that consists of three main components: in vivo exposure, imagi-

nal exposure, and processing of imaginal exposure. Its effectiveness was studied by Foa, Rothbaum, Riggs and Murdock (1991). They found that PE's efficacy has been demonstrated in a wide range of populations, including female sexual assault survivors. They randomly assigned 45 rape victims that suffered from PTSD to one of four groups: stress inoculation training, PE, supportive counseling, and wait-list control. Each intervention consisted of nine biweekly sessions. At the end of the treatment, PTSD symptoms, rape-related distress, general anxiety, and depression significantly decreased in each of the four groups. The PE group had a higher positive outcome on PTSD symptoms than the stress inoculation training, supportive counseling, and wait-list control groups did.

DBT is a cognitive-behavioral treatment designed to address suicidal and destructive behaviors and emotion regulation among individuals diagnosed with mental illnesses such as PTSD (Linehan, 1993). DBT encompasses an analysis of one's traumatic experiences, learning individual and group skills, as well as frequent consultations between with a therapist. Outcomes are improved emotional regulation, stress tolerance, and anxiety reduction, using various strategies like mindfulness and meditation (Linehan & Kehrer, 1993). This strategy allow for better tolerance of exposure-based treatment for PTSD (Becker & Zayfert, 2001).

Emotion regulation is a skill that helps patients tolerate exposure, reduce PTSD symptoms and is taught through the DBT treatment. In a case study of a three-month residential DBT intervention for PTSD related to childhood sexual abuse, Steil, Dyer, Priebe, Kleindienst and Bohus (2011) found that DBT reduces severe and chronic PTSD. Female patients were treated by clinicians who administered sessions of individual and group treatment that educated the women in interventions focusing on self-esteem, mindfulness, and psychoeducation about their symptoms were and what the treatment consisted of. At the end of their treatment, women

that received the DBT treatment had greater reduction on PTSD symptoms compared to those that did not. The findings indicated that DBT is a treatment for severe PTSD symptoms that appears to be safe from triggering patients as it did not cause any form of the crisis often associated with the PE treatment.

Becker and Zayfert (2001) argued that DBT can help address suicidal, destructive behaviors, and emotional regulation among individuals who suffer from PTSD. DBT programs allowed the patient to learn basic skills for biologic self-regulation and prevent suicidal behaviors and dysfunctional behaviors. Some PTSD sufferers are overwhelmed by strong emotions such as guilt, anger or shame when they are exposed to recollections of the traumatic event that lead them to PTSD. Through DBT treatment, patients regulate their responses when necessary by using skills such as distress tolerance, self-soothing, core mindfulness skills, dissociation, radical acceptance and avoidance of emotions. Therefore, based on the previous studies, DBT can improve tolerance rates for PE, as well as PE's effectiveness (Becker & Zayfert, 2001; Steil et. al. 2011).

Harned, Korslund, and Linehan (2014) studied the results of using DBT alone or DBT combined with PE as a treatment for PTSD in women suffering from PTSD suicidal and self-injuring symptoms. The women were assigned to a one year DBT treatment alone, or DBT followed by PE, if they managed to achieve sufficient control over not being an imminent risk of suicide, not having suicide attempts in the last two months of treatments, and being able to control impulses of intentional self-injuring when exposed to triggers for those behaviors. They found that when DBT and PE treatment were combined, women had greater improvements with their PTSD symptoms than the women in DBT treatment alone. This was due to women learning to disassociate trauma-related guilt cognitions, shame, anxiety, depression and global functioning because of the skills learned in both treatments.

The use of DBT before PE therapy as a treatment for PTSD was also studied by Harned and Linehan (2008). They published two case studies of women with chronic PTSD stemming from their college years: Emma and Natalie, 30 and 43 years old, respectively. Emma was a victim of a gang rape. Natalie was raped. Both women initially went through standard DBT sessions, and started PE therapy sessions after successful completion of DBT. Once they started PE, they were educated regarding PTSD and their situation. Then they were slowly exposed to rape related movies, stories, and songs. When they were asked to recall their memories of their sexual abuse experience, they established a coping skills plan over the course of six months. Emma and Natalie showed a significant decrease of PTSD symptom intensity during treatment and follow-up periods. Harned and Linehan (2008) concluded that the use of standard DBT allowed the individuals to tolerate PE better. Thus, DBT and PE used together can be an effective treatment for PTSD.

From this review, it is concluded that DBT allows patients to identify and regulate their emotional response and tolerance of the PE treatment (Becker & Zayfert, 2001). Skills taught in DBT, such as mindfulness, distress tolerance, interpersonal effectiveness, and emotion regulation, as well as PE skills, such as breathing retraining, in vivo exposure and imaginal exposure, will be effective to help female college students who suffer from PTSD related to sexual abuse. Specific PTSD symptoms have been observed to be alleviated, such as negative thoughts and mood, anxiety, destructive behaviors, and panic attacks that interrupt and distress their everyday life.

Discussion

The present document reviewed the effectiveness of the combined DBT and PE treatments for PTSD patients of sexual and physical abuse (Roth, Newman, Pelcovitz, Kolk, & Mandel, 1997; Harned & Linehan, 2008; Foa, Rothbaum, Riggs & Murdock, 1991; Steil, Dyer, Priebe, Kleindienst & Bohus, 2011; Kimbrough, Magyari, Chesney, & Berman, 2010; Becker & Zayfert, 2001). However, in some studies, patients were not able to tolerate PE, because they could not handle the stress and emotional reactions triggered by being exposed to reminders of the traumatic event (Becker & Zayfert, 2001; Steil et al., 2011). When DBT was implemented before PE, patients were able to regulate their responses and control their physical and emotional reactions by using the skills learnt through DBT therapy. As a result, when DBT is used before PE, tolerance for PE treatment improves and the effectiveness of a PTSD treatment increases (Harned, Korslund, & Linehan, 2014).

We already know that DBT and PE are effective alone to treat patients that suffer from PTSD. However, little research has been done on their effectiveness together in a female college-aged population (Harned & Linehan 2008). The use of PE as a therapy alone is not always appropriate for female patients who have difficulty tolerating exposure, due to the inability to control their emotional responses to trigger, or they may suffer from suicidal behaviors (Becker, Zayfert, & Anderson, 2004). When patients were introduced to DBT before PE, they are given a set of skills to regulate their responses to triggers and thus, tolerate PE better. Therefore, it is proposed that DBT should be implemented before PE therapy in female college-age students that suffer from PTSD due to sexual abuse.

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Treating Social Anxiety Disorder with Expressive Writing Therapy

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Abstract

Self-esteem issues associated with social anxiety can be overwhelming during adolescence, a vulnerable period in which a child transitions into an adult. These issues can pose a challenge for high school students who often do not have healthy outlets to cope with issues associated with vulnerable self-image and a stressful lifestyle. The effects of expressive writing on stress, academic performance, and self-esteem for adolescents

who suffer from social anxiety will be examined. The development of self-esteem through expressive writing activities that celebrate and emphasize self-expression, self-identity, and self-worth will also be discussed. This review indicates that expressive therapy in the form of expressive writing therapy can be an effective intervention for high school students who suffer from social anxiety.

Fear of rejection in social environments can greatly diminish sense of self-worth during adolescence, a vulnerable period in which a child transitions into an adult (Anderson, Jeon, Blenner, & Wiener, 2015). Due to pressures associated with acceptance, high school students, particularly freshman who are just beginning their high school journey and embarking on self-discovery, tend to develop issues related to self confidence that can be quite overwhelming and stressful. Consequently, students can develop social anxiety disorder, or the fear of embarrassment and judgement of peers in social situations (Rodebaugh, Lim, Fernandez, Langer, Weisman, & Associates, 2014).

Social anxiety disorder can lead to the development of harmful conditions such as substance abuse (Myers, Aarons, Tomlinson, & Stein, 2003). According to Myers et al. (2003), individuals who continually experience negative emotions tend to experiment with substances in order to cope with anxious situations. Self-medicating with recreational drugs can facilitate social interactions but can lead to drug addiction, even during college years where increased pressures for socialization produce negative coping strategies.

Since social anxiety disorder can result from distress related to self-consciousness, releasing such feelings can effectively be achieved through positive coping strategies (Myers, Aarons, Tomlinson, & Stein, 2003). A stimulating environment that is rooted in creative expression, such as creative writing, can aid students to alleviate tension through the appreciation of personal writing, potentially leading to a sense of internal validation that is rooted in intellectual and artistic appreciation rather than superficial factors such as appearance or economic status (Perryman, Moss, & Cochran, 2015).

This literature review will discuss expressive writing therapy exercises that increase personal development and strengthen self-reflection. Most importantly, these expressive writing intervention exercises can serve as coping strategies to increase self-awareness and to improve self-worth for students who suffer self-esteem related issues associated with social anxiety disorder (Clark et al., 2013). For example, an expressive writing exercise by King (2001) examined the effects of expressive writing on positive self-image found that students who were asked to write about personally meaningful topics, such as “best possible future self”, experienced better health and happiness as compared to the control group who were asked to write about

non-emotional topics. King (2001) also found that self-reflection through expressive writing contributed to the importance of visualizing one's ultimate goals and improved emotional regulation.

Likewise, another expressive writing exercise was found to increase self-compassion and to regulate emotions as a significant positive correlation existed between emotional processing and self-compassion, assisting participants to take action and to transform negative emotions into more positive feelings (Neff, 2003). Positive feelings can lead to improved self-esteem, which in turn can result in greater confidence (Orth & Luciano, 2015). This type of progress has often been correlated with better social and academic outcomes for students, as well as a more positive mental outlook (Park, Beilock, & Ramirez, 2014).

This literature review will also include an examination of writing-based techniques designed to decrease stress, elevate mood, and promote self-awareness. Due to recent interest in the arts as therapeutic tools, expressive art therapy is currently growing (Kelly, Davies, Harrop, McClimens, Pellow, & Pollard, 2016). Despite this, little research has specifically related expressive art therapy, including expressive writing therapy, with social anxiety disorder (Clark et al., 2013). This direction could hold a lot of promise, especially for those adverse to current treatments.

Literature Review

Creative expression can elevate self-awareness and process distress, thus has great potential as a formal therapeutic (Lomas, 2016). Creative outlets such as expressive writing therapy allow people to take control of their thoughts and channel them into actions that can help to express inhibited emotions, enriching self-identity. Writing further enriches emotional experiences through the use of words

as cathartic release. These attributes may play an important role in treating social anxiety. The following review examines the related research, with a special focus on adolescent care.

The transition from middle school to high school is a major challenge that can be overwhelming for adolescents (Facchin, Margola, Molgora, & Revenson, 2014). Facchin et al. (2014) compared three types of expressive writing: a) "benefit focused" expressive writing that required adolescent participants to reflect upon positive aspects experienced during the transition from middle school to high school, b) "standard" expressive writing that consisted of an emotional theme, and c) writing about a trivial topic. Researchers found that students who expressively wrote about positive aspects during adversity, or in this particular study, the transition from middle school to high school, experienced a significant increase in academic self-concept and a reduction in anxiety associated with high school transition in comparison to the other two conditions. Active engagement through personally written emotional disclosure aided recognition of positive strengths.

The effectiveness of an expressive writing intervention on coping strategies concerning peer problems was conducted with adolescent students (Giannotta, Settanni, Kliewer, & Ciairano, 2009). The treatment group wrote about their deepest thoughts and feelings relating to problems with peers. The control group wrote about a trivial topic unrelated to emotional expression. The Child Depression Inventory (CDI) and the Children's Manifest Anxiety Scale (CMAS) were used to assess emotional and physical symptoms of anxiety. Adolescents who were assigned to the treatment group experienced an increase in the use of positive cognitive reframing coping strategies, reducing emotional stressors. Results showed that writing about a challenging experience and reflecting upon it can serve as a learning experience, leading to decreased anxiety and positive problem solving strategies.

Addressing emotional distress in relation to peer conflicts can aid to manage stress and can benefit the development of interpersonal relationships, decreasing social isolation often associated with social anxiety disorder (Travagin, Margola, Dennis, & Revenson, 2016). Researchers assigned students to expressively write about personal emotional distress during peer conflicts (expressive writing therapy), and to express reflection on peer related issues by providing personal coping strategies and solutions (cognitively oriented expressive writing). Results indicated that students reported an enhancement in social involvement in peer relationships and a decrease in social stress. The retelling and reflective process of expressive and cognitively oriented writing served to release emotional build up.

Expressive writing therapy can elevate mood and can lead to emotional control, which is often lacking in adolescents suffering from social anxiety disorder (Lepore & Greenberg, 2002). Students were randomly assigned to an experimental group that expressively wrote about a relationship breakup and a control group that was assigned to write about trivial and non-emotional topics. Researchers found that expressive writing served as exposure therapy and diminished negative thoughts and responses to stressful stimuli through repeated emotional exposure and reflection, enhancing self-regulation coping towards stress related thoughts. Through internal self-reflection, participants in the experimental group learned to interpret distressful thoughts and memories regarding such break up by using problem solving, relaxation, and distraction techniques acquired through expressive writing.

Expressive writing can also promote a positive sense of identity (Banyard, Hamby, St. Aubin, & Grych 2015). Adolescent participants were assigned to an expressive writing exercise known as the "Laws of Life Essay" and were asked to write about values or ideas that guide how they see themselves. At the culmination of the writing activity, semi structured interviews were conducted

in order to assess emotional response towards expressive writing. The researchers concluded that participants experienced cognitive benefits from the exercise including greater self-understanding and positive insight.

Pennebaker et al. (1990) demonstrated effects of expressive writing on physical and mental health. College freshmen were divided into either an experimental group that was assigned to write about deepest thoughts and feelings regarding anxiety associated with the transition from high school to college, or a control group that was assigned to write about non-emotional topics that dealt with superficial themes. The researchers found that physician visits for illness in the months after writing were lower for the experimental subjects than for the control subjects. Experimental subjects experienced higher grade scores and positive mood elevations in contrast to control subjects. The results demonstrated that expressively writing about anxious thoughts served as an emotionally liberating technique.

Another study also found that emotional facilitation was enhanced through written expression that consisted of writing about a highly distressing event rather than low stress event (Boals, 2012). Undergraduate college students that participated in the expressive writing condition were asked to reflect on a negative event in their lives. The Impact of Events Scale (IES) was used to measure the frequency of intrusive thoughts, including current rating of stress associated with each nominated memory. Results indicated that participants who wrote about a highly stressful experience had better meaning making outcomes. The authors concluded that the writing process allows for deep emotional engagement, resulting in cathartic release of frustrations and anxiety.

Expressive writing can also reduce anxiety in academic performance (Park, Beilock, & Ramirez, 2014). Researchers found that poor math skills do not directly contribute to math anxiety. Instead, anx-

ious thoughts and fears triggered by mathematical performance affect working memory, or retention that is necessary to find solutions to intricate problems, such as mathematical calculations. They concluded that as working memory function declines, effective performance decreases. Participants were prescreened and identified as low math-anxious individuals (LMA's) and high math anxious individuals (HMA's). They were asked to either write about their worries in an expressive writing group or to sit quietly in a control group before an exam. The participants were then told to specifically wait in the control condition in order to mimic as closely as possible the act of "waiting" that students often do right before an exam. After either writing or sitting quietly, all participants took an exam that consisted of math problems and word problems that were equally divided between high demand problems and low demand problems. Researchers predicted that HMA's in the control group would perform significantly worse than LMA's on math problems when they sat quietly before completing the math task. It was further predicted that math-performance related discrepancies would be particularly common when participants solved complex math problems. Results determined that individuals with high math anxiety did in fact perform significantly worse than individuals with low math anxiety on high demand math problems.

However, after a single session of expressively writing anxiety fears associated with math related performance through therapeutic writing, HMA's were predicted to perform at a similar level as to the LMA's (Park, Beilock, & Ramirez, 2014). Results indicated that high math anxiety individuals who were assigned to the expressive writing condition performed significantly better than high math anxiety individuals who were assigned to the control condition on high-demand math problems. Researchers also found that expressive writing lessens math related stress through the act of releasing tension through writing. They concluded that math related anxiety decreases due to mental reflection

that assists students to rationalize, identify, comprehend, and execute effective emotion regulated strategies towards decreasing emotion related performance. The researchers further stated that expressive writing can serve as a simple clinical technique that encourages emotional release and may help to alleviate stress by allowing the individual to briefly disassociate and distance oneself from the immediate stressor, freeing working memory and effectively regulating an emotional response to the stressor.

Klein and Boals (2001) examined the effect of expressive writing on working memory. College freshman were subjected to two experiments. In the first experiment, first semester students were asked to write about anxiety associated with college life. In order to assess the student's levels of anxiety, the College Adjustment Test (CAT) was used to measure levels of loneliness, homesickness, and social difficulties. Researchers found that in the first study, students who were assigned to expressively write about anxious feelings related to college life significantly increased their working memory capacity seven weeks later compared to students in the control group that were assigned to write about a non-stressful life event.

In the second experiment, freshman students were randomly assigned to write about time management, college related difficulties, or positive college related experiences. Students who expressively wrote about college related difficulties demonstrated greater working memory improvements compared to students who wrote about a positive experience or a superficial topic such as time management.

Lauer and Goldfield (1970) found that expressive writing therapy facilitated self-understanding, self-expression, and produced catharsis. Known as guided affective imagery, writing has often been used in individual psychotherapy as a means for patients to express their issues. A study was conducted using group sessions of writing, reading, and dis-

cussion with a youth drug study unit, psychiatric ward, and a psychiatric outpatient clinic. Patients who would otherwise be socially marginalized in alienation, such as the adolescent drug users, benefited from expressive writing as their creative work provided a platform to voice thoughts and opinions. Participants expressed frustrations and aggression through writing rather than through potentially dangerous actions while increasingly building self-awareness, open-mindedness, and opinionated tendencies through group discussion that assisted positive social interactions. They further found the expressive writing intervention to be a socially exclusive experience and a natural therapeutic release, reducing sense of isolation and lack of understanding.

A study using expressive writing in group therapy was further conducted by Perryman, Moss, and Cochran (2015). Six at-risk adolescent females who had a difficult home environment, low grades, and experienced trouble maintaining friendships met weekly and participated in artistic activities that included various creative writing techniques. The researchers found that the students experienced an increase in personal growth, creativity, catharsis, stimulation, emotional awareness, focus, and socialization.

Online blogging can be another form of an expressive therapeutic writing exercise (Boniel-Nissim et al., 2013). Adolescent participants who suffered from anxiety triggered by social interactions were encouraged to maintain an internet blog that focused on topics related to personal distress associated with pressures on self-image. The participants who maintained a blog expressing their distress significantly improved on measures of emotional distress and self-esteem. Researchers found that expressively writing through blogging on the internet provided participants with valuable interpersonal skills that socially anxious individuals tend to lack. Self-exposure that consisted of exchanging information, reciprocal feedback, and building of relationships contributed to crucial so-

cial skills, empowerment, and overall well-being (Boniel-Nissim et al. 2013). In addition, adolescent participants who were open about their difficulties and open to responses gained the most self-satisfaction. This finding reflects the impact of expressive writing on emotions associated with an individual's self-perception, social skill development, and social bonding.

The studies above indicated that expressive writing supports emotional health and anxiety management. Specifically, writing therapy allows students to channel frustrations and express such feelings through creative writing endeavors, enriching self-growth (Anderson, Jeon, Blenner, & Wiener, 2015). Through expressive writing therapy, students can experience self-awareness, emotional stimulation, and most importantly, self-appreciation, influencing self-esteem which in turn can lead to more positive and productive social interactions (Lauer & Goldfield, 1970).

Discussion

The majority of people who have social anxiety disorder do not seek help or support due to the stigma of rejection that is attached to mental disorders (Myers, Aarons, Tomlinson, & Stein, 2003). Instead, many adolescents turn to substance abuse in order to cope with stress in social environments. The abuse of substances can exacerbate as adolescents enter adulthood and can lead to addiction and consequent depression. However, expressive writing therapy can provide adolescents with cathartic emotional release through creativity and self-expression. A greater sense of self-expression can lead to greater confidence and a greater sense of identity, providing students with positive coping mechanisms to socially integrate (Nelson, 2010).

It is crucial for the effectiveness of expressive writing therapy to be further researched and studied,

especially for socially anxious young people who often avoid seeking out established therapy treatments. Providing socially anxious students with an intervention that is focused on self-expression through written expression will present students with therapeutic activities that reduce social stress and promote self-assurance. An after school expressive writing workshop directed towards high school students who suffer from social anxiety disorder could serve as a therapeutic intervention. The intervention can focus on the development of self-worth through various creative writing activities that celebrate and emphasize emotional expression, self-identity, and self-esteem. Topics must be designed for students to channel and reflect upon personal emotions, state of mind, and self-identity while open discussion can encourage students to develop social skills and confidence.

In order to test lasting efficiency of the intervention, follow-up studies should be administered using the same intervention program but with another sample of participants. If future data supports its widespread reach, then this after school activity could be implemented into the secondary education curriculum as an elective course.

There are limitations to expressive writing therapy as with any psychological intervention. Expressive writing therapy may not be effective for people who experience cognitive or intellectual challenges since knowing how to read and to write are essential components of a writing therapy intervention (Gersten & Baker, 2001). Also, it is vital for expressive writing sessions to concentrate on positive topics that focus on personal resilience, self-empowerment, and emotional well-being. Eliciting negative emotions could potentially backfire depending on each student's prior experience (Gidron, Peri, Connolly, & Shalev, 1996). Furthermore, topics that relate to unsettling events should be carefully considered since written reflection regarding such experiences could trigger past trauma (Gidron, Peri, Connolly, & Shalev, 1996). Some studies indicate that writing

about traumatic experiences may exacerbate symptoms for individuals who may suffer from traumatic disorders, such as post-traumatic stress disorder (Gidron, Peri, Connolly, & Shalev, 1996). Therefore, it is important to monitor how students respond to each expressive writing session. Carefully observing behavioral or emotional symptoms associated with rumination or obsessive-compulsiveness in writing can aid to recognize emotional distress since such patterns of behavior can actually contribute to issues rather than improve them (Gidron, Peri, Connolly, & Shalev, 1996).

Lastly, it is not completely clear if there are benefits to continually expressively write throughout the school year as opposed to short series of expressive writing sessions (Cohen & Sherman, 2014). Studies showed benefits for a series of short sessions in the first year of an intervention in value-affirmation writing research but no additional benefits if the same intervention was repeated in the second year. Consequently, in order to test the lasting efficiency of expressive writing therapy, further studies should be conducted using the same interventions and including longer follow-up assessments.

Further study of the benefits of expressive written reflection on lack of confidence and lack of self-worth, root causes of social anxiety disorder, will lead to a better understanding of the effects of expressive writing therapy on social anxiety disorder. Since the expressive writing exercises were determined to have a significant effect on emotional awareness and self-regulation, they were found to elevate self-esteem. Such findings support the notion that expressive writing therapy can be effective towards reducing internal anxiety in social situations, leading to assertive social interactions and enhancing overall mental well-being.

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Effects of Accents on Perceived Education

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Abstract

This study was designed to further understand discrimination against those with foreign accents. Specifically, the study evaluated the effects of foreign accents versus American accents on perceived education ratings. A group of twenty-two undergraduate students from a northeastern university were asked to listen to recordings of different individuals reading a specific passage. After listening to each recording the participants rated the education level of the speaker. Considering the extensive prior research identifying foreign accents as indicators of lower intelligence, social status, and abilities, the hypotheses was

that college students would attribute lower levels of education to foreign accented persons than to native accented persons. The results showed a significant effect of accented speech on perceived education ratings. The education ratings were significantly higher when the students listened to the recordings of American accented speech.

Keywords: language, accents, accented speech, linguistic discrimination, accent discrimination, foreign accents, perceived education, language bias

Foreign accents, differences in style and pronunciation of standard American English speech can be subject to negative evaluation and discrimination (Ingram, 2009). This phenomenon is identified as linguistic discrimination, the unfair treatment of persons based solely on the characteristics of their language (Whitley & Kite, 2010). The discrimination may focus on an individual's native language or other characteristics of the person's speech. Based on differences in language, such as accent, vocabulary, and syntax, a person may automatically make assumptions and judgments about another person's wealth, education, social status, character, and/or other traits. These judgments may then lead to prejudicial treatment of the individual. More specifically, in the United States, the ability to speak Standard American English can have serious consequences for people, considering that one's intellectual ability is often judged on the basis of how well one speaks English (Ingram, 2009). Judgement and discrimination based on a speaker's accent or other language variables have been found to emerge in the earliest interactions, when listener's attitudes toward people change as soon as the individual speaks (Gluszek & Dovidio, 2010). If an accent is detected, negative opinions of the speaker can be formed, even after only few words spoken. Indi-

viduals with accents are often perceived as inferior compared to Standard American English speakers, who are perceived to be more desirable, prestigious, and pleasant to listen to (Gluszek & Dovidio, 2010).

Linguistic discrimination appears early in development, since preferences toward one's native language become evident during infancy (Moon, Cooper, & Fifer, 1993). Thus, much of the research in this field has focused on behaviors among children. One study sought to understand linguistic discrimination by evaluating the language preferences of infants and children (Kinzler, Dupoux, & Spelke, 2007). Babies and children raised in American English speaking homes were shown films of two adult women speaking, either in American English or English with a Spanish accent. Both children and infants gazed longer at the American English speakers, displaying preference to their native language.

Kinzler, Shutts, DeJesus, and Spelke (2009) also concentrated their linguistic discrimination research on children, investigating the effect of language, accent, and race on children's social preferences. The researchers evaluated children's friendship choices when presented with photographs and voice recordings of other children, and found that 5-year-olds chose to be friends with native speakers

of their language rather than foreign language or foreign-accented speakers. Similar results were found in a study evaluating speech's influence on children's food choices (Shutts, Kinzler, McKee, & Spelke, 2009). The researchers found that children look to individuals for guidance in food selection, and that they rely especially on speakers of their native language to make food choices. Twelve month old children were shown videos of two unfamiliar actresses, a native language speaker and a foreign language speaker, while speaking and eating each a different food. When presented with the choice of food after watching the videos, the infants repeatedly chose the food that was eaten by the actress speaking their native language.

Accent discrimination in more formal settings was examined by Kalin and Rayko (1978). The researchers evaluated the effect of ethnicity of speakers, as revealed in accents, on judgments of job suitability. After being presented with brief biographical profiles and listening to 30-second job interview recordings, the participants were asked to predict how well the job applicants would do in four job positions. Foreign-accented applicants were rated lower for the higher status jobs but higher for the lower status jobs, revealing discrimination in favor of native English speakers. Also, language characteristics of applicants affected employment judgements.

Another study supported the above findings (Purkiss, Gillespie, Mayes, & Ferris, 2006). An interaction was found between the applicant name and accent, which affected the judgements of fictitious applicant's ethnicity and accent. Participants were asked to listen to three types of interview recordings varying the applicant's ethnicity and/or accents. Applicants possessing both ethnic names and accents were viewed less positively than the other test conditions.

Accent discrimination has even been found in listeners who speak with accents (Hosoda, Stone-Romero, & Walter, 2007). The cognitive and affective reactions were measured in response to either Vietnamese-ac-

cented or American-accented English speakers. Participants listened to a recording of a person briefly describing themselves, and then reported their reactions in a questionnaire. One participant group consisted of American-accented English speakers, and the other group consisted of Foreign-accented English speakers. The voice recordings of American English speakers were rated more favorably than the Vietnamese-accented speakers, by participants in both groups. The ratings were based on social status attributes, such as intelligence, wealth, and competence.

Preference for one's own native language has also been found to occur within learning environments (Kinzler, Corriveau, & Harris, 2011). This study investigated whether elementary school kids prefer to learn from native speakers or foreign-accented speakers. The participants were 4–5-year-old American English-speaking children. They were, first, presented with videos of two individuals, one who spoke in the child's native language (American English), and one who spoke with a foreign accent (American English with a Spanish accent). The children were then shown videos of the same individuals giving conflicting and visual only instructions for a task. Children both paid attention to, and followed the instructions given by the individual whom they had previously heard speaking in their native language when watching the video, rather than the foreign-accented speaker. These results revealed that young children demonstrate selective trust in native-accented speakers even when neither informant's speech relays meaningful semantic content, and the information that both informants provide is non-linguistic.

Although there are specific laws prohibiting discrimination based on race, ethnicity, homeland, or economics, discrimination based on language is not specifically covered by such laws (Ingram, 2009). This merits the need for research to identify whether or not discrimination based on language is prevalent enough to require regulation by law. In order to judge the prevalence of language dis-

crimination, it is important to identify which and how many settings it presents in. The research discussed in the previous paragraphs identified the presence of language discrimination in professional settings, personal relationships, and early childhood education. In order to identify its presence in other settings, the current study sought to find if language discrimination was displayed within higher education. The study evaluated the presence of linguistic discrimination, through the analysis of perceived levels of education attributed by college students across different accents. The hypothesis was that individuals would attribute lower levels of education to foreign accented persons than to native accented persons, considering the prior evidence associating foreign accents with lower evaluations.

Method

PARTICIPANTS

A group of twenty-two undergraduate students from a northeastern university were asked to participate in the study. The participants were recruited through convenience sampling. All students were at least 18 years old and gave informed consent. Some students received partial course credit for classes they were taking. The data from two of the participants was excluded due to their being distracted while doing the experiment (e.g. using their cellphone).

PROCEDURE

A within subjects design was used to investigate the effects of accents on perceived education level. Participants were asked to listen to recordings of different individuals reading a specific passage. The passage was obtained from the online Speech Accent Archive (Weinberger, 2015), and was the same in all the recordings (See App. I for written passage). All participants were exposed to both levels of the independent variable of accent, by listening to recordings of individuals with foreign accents as well as of individuals with American accents (See

App. II for accent descriptions). The order in which the recordings were presented was randomized for each participant. The participants listened to the recordings through headphones connected to a computer. After listening to each recording the participants were asked to rate the education level of the speaker with a keyboard press. Ratings were on a Likert scale (App. III).

RESULTS

A t test for dependent samples evaluated the effect of accented speech on education ratings. The education ratings were significantly higher when students listened to the recordings of American accented speech ($M = 4.63$, $SD = 0.90$) as compared to the education ratings when students listened to the recordings of foreign accented speech ($M = 4.05$, $SD = 0.84$), $t(19) = 3.39$, $p < 0.05$, $d = 0.75$.

Discussion

The results showed a significant effect of accented speech on education ratings. Since the education ratings were significantly higher after listening to recordings of American accented speech compared to foreign accented speech. These results provided further evidence of accent discrimination, particularly in higher education. The idea that, in the United States, one's abilities may be judged on the basis of how well one speaks English is supported in the current study.

The findings in the current study coincide with prior research covering the subject of linguistic discrimination (Kalin & Rayko 1978; Purkiss et al., 2006). These studies showed favoritism in the workplace for native English speaking employees, as well as biased judgement toward foreign-accented job applicants.

The current results also supported an earlier finding that foreign accented speakers are rated more

negatively on social status-related attributes such as intelligence (Hosoda, et al., 2007). The discrimination based on accent displayed by college students in the current study indicates that preferences toward one's native language established during infancy are likely to remain beyond childhood and into the adult years (Kinzler et al., 2007; Kinzler et al., 2011).

Although the current study did not evaluate the effect of accents on college students' social preferences, it would be important to evaluate this in future research considering that accents were found to affect social preferences in children (Kinzler et al., 2009).

American society is characterized by ethnic diversity, where interactions between American-accented English speakers and Foreign-accented English speakers are prevalent (Hosoda, Stone-Romero, & Walter, 2007). This poses the need to further understand the effects of accent discrimination on the everyday interactions between the members of our society. The current study adds to the mounting evidence suggesting the prevalence of accent discrimination in our society, and its validity as a current social issue. As a result of the increasing rate of globalization and international relations, interactions between native and non-native English speakers across the world are also on the rise (Gluszek & Dovidio, 2010). Considering this, it would be favorable to further understand the implications of accent discrimination on intercultural communication and how it may affect international relations. In addition, the various research covered in this study as well as the results of the current study suggest that unfair treatment of individuals may emerge as a result of accent differences, which proposes the need to develop policies aimed at reducing accent discrimination.

Although an effect of accented speech on education ratings was found in the present study, the methodology could be refined. For starters, taking into account the participants demographics would have allowed for the data to be analyzed as a func-

tion of attribute variables, such as gender, age, and ethnic background. When considering gender, the data could have been analyzed for effects of the listener's gender on the actual assumptions of education levels. The perceived education ratings given by females and by males could have been compared to evaluate whether females and males judge accents differently. In the same way, the gender of the speaker in the different recordings could have also been used to determine whether the education ratings within each of the groups differed based on the gender of the speaker, since the assumed education level could have been attributed to the gender of the speaker rather than the accent. Both of these analyses would be beneficial in identifying the relationship between linguistic discrimination and gender biases.

In addition, the mean education ratings given to each of the speakers should have been measured to compare whether there were significant differences in the education ratings based on the specific accent. For example, evaluating whether the recording of the British English speaker received higher education ratings than that of the Sudanese-accented speaker would reveal if certain foreign accents were rated more favorably than others. In the same way, when it came to the American English speaker ratings, comparing the different education ratings would show whether accents from one area of the country were perceived more favorably than those of another area.

The results of this study could have also been affected by the presence of several distractors in the environment. Since several experiments were being conducted simultaneously, distractions were present that could have affected the subjects' responses. A more controlled environment would have been more appropriate.

To conclude, this research provided support for the presence of accent discrimination in higher education settings. The existence of accent discrimination

identified in the past literature, and in this study, is only a small part of what may be a nationwide, or perhaps even worldwide, issue of racial discrimination. This elicits the need for increased awareness and possibly the implementation of policies to ad-

dress this issue. Further research may allow for a deeper understanding of the implications of accent discrimination in our society, and provide a proper foundation for policy development.

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Appendix I

All recordings were of the following passage

Please call Stella.

Ask her to bring these things with her from the store:

Six spoons of fresh snow peas, five thick slabs of blue cheese, and maybe a snack for her brother Bob. We also need a small plastic snake and a big toy frog for the kids.

She can scoop these things into three red bags, and we will go meet her Wednesday at the train station.

Appendix II

The following table contains the descriptions of the accents used for the experiment for both levels of the IV

AMERICAN ACCENTS	FOREIGN ACCENTS
Massachusetts - Female	Taiwan - Female
Wisconsin - Female	Germany - Female
Louisiana - Female	England - Female
Kentucky - Male	Bosnia - Male
Texas - Male	Sudan - Male
California - Male	France - Male

Appendix III

Likert scale used to rate the education level of the speaker.

1. No School
2. Some School
3. High School Diploma
4. Some College
5. Associates Degree
6. Bachelor's Degree
7. Master's Degree
8. Doctorate
9. More than one degree

Driven Exercise, Family Based Therapy, and Ideas for Future Research on Anorexia Nervosa in Teens and Adolescents

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Abstract

Anorexia nervosa is an eating disorder largely affecting female adolescents. This psychological disorder has serious cognitive and physical symptoms, and potentially can result in death. This literature review assesses current treatment strategies focused on family support and driven exercise. A family based therapy is an effective approach for young patients. As family dynamics and technology have changed in modern society, it is proposed that they should be factored in to the continued progression of optimal treatment plans for eating disorders.

Anorexia nervosa is an eating disorder that most often affects adolescents and teenagers (Mayo Clinic, 2016). Family based therapy is a frequently employed intervention for anorexia because of its effectiveness and because most who suffer with anorexia are teenagers still living at home/with family (White et al., 2015). The goal in treating anorexia is to achieve a healthy and appropriate weight (Madden et al., 2015). Psychological insight into the problem is not enough to deem treatment successful in anorexia because of the physical danger of severely low weight (Madden et al., 2015). The goal of this literature review is to summarize research on common treatment strategies of anorexia nervosa, as well as consider driven exercise and its accompanying problematic symptoms. In addition to existing treatments and interventions, ideas for new and innovative therapies are proposed.

Anorexia nervosa is difficult to overcome due to its long-term effect and high mortality rate (Eisler et al., 2000). This eating disorder is more prevalent in females than males, and typically is found in a younger age group, being most frequent in teenagers (Mayo Clinic, 2016). Anorexia is especially concerning because of its tendency to affect sufferers long-term and its mortality rate (Eisler et al., 2000).

It is characterized by both physical and psychological symptoms (Mayo Clinic, 2016). The physical symptoms of anorexia nervosa, often referred to as anorexia, include but are not limited to low body weight, food restriction, and controlling food intake via purging or use of laxatives (Mayo Clinic, 2016). While the term anorexia nervosa is likely to elicit images of emaciated teenagers, the unseen psychological symptoms that accompany the disease are just as traumatic as the physical symptoms. Some of these psychological symptoms include depression, suicidal thoughts, social withdrawal, anxiety, body dysmorphic disorder, and intense fear of gaining weight.

Despite the seriousness of anorexia, recovery is achievable through treatment and therapy. Family based therapy (FBT) is a common intervention used in treating anorexia (Ciao et al., 2015; White et al., 2015; Couturier et al., 2010), because of the age range most affected. While other therapy strategies are utilized in treating anorexia nervosa, FBT remains at the forefront of successful therapeutic intervention, given its successful track record.

While FBT has long shown to be successful in treating anorexia nervosa, American family dynamics are changing (Pew Research Center, 2015).

Traditional two parent households are becoming less common due to divorce, remarriage, and other non-traditional marriage setups). In 2014, less than half (46%) of children in the United States were living with both parents in their first marriage, a stark decrease from earlier generations. Additionally, families are getting smaller, with mothers tending to bear fewer children in the present era than previous generations. This changing family dynamic could affect treatment of anorexia nervosa.

The advance in technology, such as smartphones, is also influencing the dynamics of interpersonal relationships. In addition to the well-known social media apps such as Facebook and Instagram, there are a plethora of health and fitness apps available to those with smartphones and other electronic devices. While many people use fitness apps and health monitoring devices to lose weight for health reasons, these same apps could have enormous potential benefits for those trying to overcome anorexia nervosa and other eating disorders. Carefully monitoring of daily diet and exercise choices could positively support healthy habits for people suffering from anorexia nervosa.

Anorexia patients usually exhibit at least one unhealthy strategy for losing and maintain body weight (Stiles-Shields et al., 2015). Food restriction is a very common method of body manipulation. Driven exercise (DE) is often more problematic than food restriction, because of the accompanying obsessive and compulsive traits and behaviors. DE is intense and extreme exercise solely practiced to lose or maintain weight. Anorexia nervosa is often associated with stereotypical images of gaunt individuals, but DE can justify these symptoms. While low body weight and obsessive exercising can be unhealthy, anorexic patients are known to portray themselves as athletes or fitness and health nuts, rather obsessive and compulsive anorexics. For instance, low weight and excessive and driven exercise are traits that are heavily rewarded in some sports, such as endurance sports. In cycling, riders

who are lightweight and in shape as the result of countless hours on the bike can be rewarded with the rush of climbing uphill faster than their heavier and less compulsively driven competitors. One's weight can become too low, for anyone, and time exercising can be excessive and counterproductive. Crossing that line can become hard to notice when every additional pound lost is met with praise from one's peers and competitors for performing well.

Anorexia nervosa is a difficult disorder to treat, but can be completely treatable (Mayo Clinic, 2016). Full recovery can be attained with early diagnosis and proper treatment. FBT has been shown to be effective, but should be updated to align with changes in technology and family dynamics. This paper will examine strategies to treat anorexia by considering FBT and DE.

Literature Review

FBT is the most promising treatment for adolescent anorexia nervosa (Ciao et al., 2015). Families are greatly influential on the well-being of eating disorder patients, whom are often females 15-22 years of age (Eisler et al., 2000). The effectiveness of FBT will be reviewed, with an emphasis on family dynamics, as well as the implications with DE.

Ciao, Accurso, Fitzsimmons-Craft, Lock, and Le Grange (2015) discussed the importance of family function and its perception by each member of a family in the development of eating disorders. Historically, eating disorders of adolescents and family dysfunction were almost always related, though not necessarily causal. In adolescent anorexia nervosa, family therapy has traditionally been a preferred treatment option because of the fact that the adolescent tends to live at home, and because of the family's direct connection to the availability of food. Early research on FBT has noted that high amounts of "parental criticism" were related to discontinued

treatment. This result emphasized the effect of family functioning on both the development and sustainment of anorexia nervosa in adolescents.

Increased stress within the family unit is associated with anorexia nervosa (Ciao et al. 2015). A study observed 121 adolescents aged 12-18 with anorexia nervosa, engaged in either family or individual therapy sessions over a one year period. Both therapies improved anorexic symptoms. Regardless of therapy type, family dysfunction ratings differed between the patients and their parents. The adolescents voiced greater family dysfunction than the parents. Worth noting was the connection between the adolescents' ratings of family function and the severity of the adolescent's eating disorder problems. Adolescents who rated family dysfunction as higher tended to have more severe eating disorder problems (bulimia, eating-related obsessive-compulsive behaviors). This connection may indicate that the adolescent's rating is the most relevant to treatment. Though the rating may not reflect reality in terms of family dysfunction, it is the best forecaster of the severity of the adolescent's eating disorder issues.

White et al. (2015) examined the effect of family therapy on the meal behavior of adolescents with anorexia nervosa. FBT is a consistent presence, highlighted by the most affected age group. Food refusal is a common tactic employed by those suffering with anorexia nervosa. Family prompts to eat appear to be a key factor in adolescents eating more. One of the goals highlighted in this study was encouraging the adolescent to eat an additional mouthful of food than desired. Families ate a prepared meal in front of a therapist, while the adolescent received prompts from the parents. Different types of eating prompts were differentiated between those that encouraged discouraged food consumption. Direct eating prompts ("You've got to eat all your eggs.") and physical prompts ("pushing plate of food towards adolescent") were the most commonly employed. The negative emotional tone

increased with the number of prompts. However, it was found that the use of more food related prompts was associated with increased food intake. This could explain the negative emotional tone with prompts, given that the adolescent was eating more, even though he or she did not want to. Behavioral changes, rather than cognitive insight, seemed to be more important for positive changes in eating habits. This is the main premise behind family based therapy. Also, family functioning improved after increased eating and weight gain. While insight may help to recognize symptoms, the behaviors surrounding good eating habits seem paramount to recovery. Though that seems obvious, other psychological disorders benefit more directly from insight-oriented therapy. Given the mortality rate of anorexia nervosa, perhaps insight is less important than the patient obtaining optimal nourishment.

Couturier, Isserlin, and Lock (2010) studied the effectiveness of FBT. Fourteen adolescents underwent a multi-phase treatment program lasting about nine months. The therapy was outpatient and involved 20 sessions. Early phases consisted of meetings between the therapist and the entire family. The sequence of sessions progressed with increased frequency and restrictions on the adolescent. When symptoms improved, sessions occurred less often and the adolescent was given more freedom and control over their eating. The results confirmed FBT's effectiveness, with a mean weight gain of 7.8 kg. Percent of ideal body weight was 80.4% at the beginning of the study and almost 96% upon completion. This study supported the use of FBT, but was limited by a small sample size.

Madden et al. (2015) studied the relationship between early weight gain and overall treatment response. Sixty-nine adolescents with anorexia nervosa completed the treatment. Participants attended 20 sessions of FBT over the course of one year. Early responders (first ten weeks) to the treatment showed the quickest and longest-lasting improvements. The "non-responders" did not gain

weight, excessively exercised, and were the most vulnerable to depression. Because of the physical effects of the disorder, improving the underlying psychological conditions is not enough to deem treatment successful. Weight must be restored for long-term health. In light of these findings and the mortality rate, therapists should closely monitor the early stages of treatment, and make necessary adjustments promptly.

Extreme exercise is a common among anorexia nervosa patients (Stiles-Shields, Bamford, Lock, & Le Grange, 2015). This behavior, of DE, is characterized by extreme intensity, compulsive nature, and exercise driven solely by its effect on the person's weight. Those who engage in driven exercise feel compelled to exercise and will often having immense regret or guilt if they do not exercise. This practice of exercise goes far beyond that which would be considered healthy and beneficial to the body. Eating disorder symptoms and depressive symptoms are usually worse in those people who also express DE.

Stiles-Shields et al. (2015) studied 201 adolescents with eating disorders undergoing FBT and individual psychotherapy. While DE symptoms were not a factor for BN treatment, Anorexia nervosa patients with DE had markedly worse symptoms than non-DE patients. DE may be indicative of a larger problem, extending beyond eating habits. DE is a sign of obsessive-compulsive disorder and obsessive beliefs. The highly rigid behaviors and irrational beliefs surrounding DE necessitate more intense therapy that specifically addresses these behaviors.

Higgins, Hagman, Pan, and MacLean (2013) studied the connection between increased physical activity and inpatient hospitalization in adolescent and teenage females struggling with anorexia nervosa. The purpose of the study was to see if inpatient hospitalization was preceded by severe calorie restriction or increased physical activity. Exercise was a stronger indication of imminent hospitalization

than caloric restriction. In a questionnaire, subjects were asked to specify their eating and exercise habits over the past six months as well as these habits in the week prior to being hospitalized. Notably, eating habits did not change significantly between the previous six months and the most recent week. However, exercise habits changed drastically, with a stark increase in the week preceding the hospitalization. Anorexic sufferers already have very low caloric intake. The importance of this study is that it shows a true warning sign of worsening anorexia nervosa. Significant increases in exercise should be considered a marker of worsening symptoms.

Based on the above studies, FBT remains at the forefront of treating anorexia nervosa. Family support is crucial in helping adolescent patients. Altering the child's daily habits is the first priority, and can provide the long-term structure needed to successfully combat this eating disorder. DE adds further complication, and needs special attention and careful monitoring. The next section contains a discussion on the ramifications of the current literature, and proposals on how to optimize treatment strategies for the future.

Discussion

Based on the literature reviewed, successful treatment of adolescent and teenage anorexia nervosa should include a strong FBT element and an individual psychotherapy focus. Historically, because of the age of the group studied, a family based therapy program is utilized as the primary treatment more often than just individual psychotherapy alone. Due to adolescents/teenagers continued reliance on others for support at their younger age, the use of parents or parental figures, as well as siblings, is seen as a beneficial treatment tool. Families can show support and motivation but also hold the patient accountable for behaviors. Inclusion in therapy sessions, whether partially or for the full

duration, helps families understand the disorder as well as the particular issues surrounding their son or daughter's individual struggles.

While individual psychotherapy is beneficial in treatment, the mortality and morbidity of the disorder necessitates prompt, effective treatment. Family therapy has long been the standard intervention, although combining family therapy with individual psychotherapy may be beneficial. Once anorexic symptoms have subsided and healthier behaviors have been maintained, developing insight into the disorder and accompanying psychological tendencies could benefit the long-term well-being of the client. Understanding the origin of anorexia nervosa in an individual once the immediate risks have subsided could have benefits outside of just the eating disorder. The self-realization found in therapy can yield long-term benefits in people being able to relate to themselves, their family, and surrounding community.

One of the most important finding to consider is that physical changes are on par with emotional and mental insight in terms of treatment effectiveness (Ciao et al., 2015; White et al., 2015). Unlike other disorders, complete insight into the problem of anorexia nervosa without any physical changes (eg. weight gain) would still be viewed as ineffective in treatment. The mortality rate surrounding eating disorders and particularly adolescent anorexia demands physical change. Parents and other family members play a critical role in that weight gain and maintenance.

It is important to monitor the physical activity level of teenage eating disorder sufferers in order to identify potential high-risk cases. Higgins et al. (2013) found that increased physical activity, not decreased caloric intake, usually preceded a hospitalization in teens with anorexia, while Stiles-Shields et al. (2015) found that DE was an indicator of more intense issues to address in an eating disorder. Modern technology offers low-cost and highly effective methods of monitoring activity via the use

of health-monitoring devices. The benefit of using a health-monitoring device is taking the ambiguity out of caloric expenditure and holding teens and their families more accountable. Clinicians and clients could use these devices and their accompanying apps in treating anorexia nervosa. By having a concrete number of calories burned and other physical activity markers, participants, families, and treating clinicians could better mark the signs of impending trouble and act against it before it becomes too serious. Brands like FitBit and Garmin have websites where one's account could be viewed in detail, giving a comprehensive day-to-day and month-to-month view at progress. In order to be effective the devices would have to be held to a certain level of validity and reliability. Future research would benefit from the design and implementation of handheld and easy-to-use technologies as preventative measures. The accuracy and reliability of devices like the FitBits have been contested (McPhate, 2016), but improvements have occurred and future products could be more refined in their measurements. FBT has long been the standard of treatment for anorexia nervosa, and the addition of health monitoring may be an important new tool in the therapist's repertoire. The future direction of research and treatment for eating disorders should reflect the availability of hand-held technologies, as well as the constant integration of our digital world.

Future research should focus on intervention methods that keep adolescents and teenagers with anorexia nervosa out of inpatient hospitals for short term visits. Inpatient hospitalizations, while undoubtedly necessary at times, reinforce poor coping methods for those with eating disorders (Higgins et al., 2013). While eating disorders and many other psychological disorders can be hard to manage, short-term inpatient hospitalizations run the risk of promoting the notion that avoidance is a coping tactic. Hospitalizations provide immediate intensive care, but can disrupt the lives of the adolescent/teen in other realms of society. Missing school or other life events can make returning to day-to-day life

more difficult and stressful. Additionally, repeated hospitalizations can hinder the developing self-reliance of an adolescent/teen by reinforcing that the disease is too much or too big for them to fight and overcome. Given the above, a treatment goal of avoiding inpatient hospitalizations serves to benefit the individual suffering as well as their families and treatment team.

For those suffering with anorexia nervosa combined with DE, more intensive therapy is needed. Because of these traits, this particular kind of anorexia nervosa can be more difficult to treat and overcome. DE should be a focus of treatment in addition to the other aspects of anorexia nervosa. Finding balance daily exercise and lifestyle habits is a key to combating driven exercise. Maintaining a healthy lifestyle through exercise and proper diet are great treatment goals for those with anorexia nervosa. Finding and maintain a healthy equilibrium that can be difficult, especially for those prone to obsessive and compulsive tendencies, which calls for close monitoring of daily behaviors.

Irrespective of DE, anorexia nervosa is a disorder of imbalance. Finding the proper levels of healthy eating, body weight, and exercise are long-term goals that require patience and commitment from clinicians, patients, and their families. Once the serious and precarious physical symptoms have subsided in a person overcoming an eating disorder, continued psychotherapy can help an individual to understand the origin of eating disorders and other behaviors such as DE. Future therapeutic interventions should seek to maintain relevance in the changing state of family and technology dynamics. The continuous advent of handheld technologies and the constant integration between our digital and physical world has the potential to usher in new approaches to addressing eating disorders. The current generation of adolescents and teenagers is constantly plugged in to the world of apps, smart devices, and social media. A modern intervention designed with this application in mind could carry weight in the treatment of eating disorders.

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