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ABSTRACT

Profanity is a commonplace occurrence in everyday conversation and society as whole. Previous studies have analyzed the reasons people use profanity as well as the function of profanity in various stressful situations, such as pain. Emotional regulation is a series of strategies people use to control and modify their emotions. One frequent target emotion to be regulated is anxiety, a state of fear which may elicit avoidance behaviors and defense reactions. However, no previous research has exclusively looked at profanity as a potential emotional regulation strategy. This study determined whether or not profanity was a useful emotional regulation strategy for anxiety. Participants were recruited from undergraduate psychology courses at a southern university. Their participation in the study involved watching a frightening scene from a scary movie and assigned the use of either a profane or mundane word at specific times during the video. Profanity was hypothesized to diminish anxiety in an anxiety-inducing situation. No significant results were found from *t*-tests to compare the anxiety levels of the conditions.

F#@&!: Profanity as a Means of Emotional Regulation

A Thesis

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The Faculty of Department of Psychology

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Master of Science

By

Nicholas Gregorich

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Master of Science in Psychology

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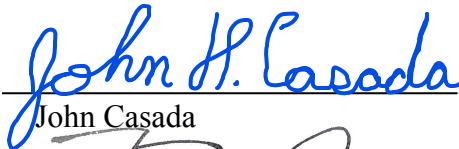
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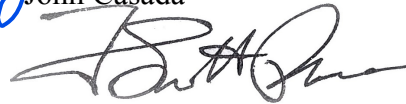
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CHAPTER I
LITERATURE REVIEW

Profanity

Profanity is a series of words, utterances, and phrases with strong social, cultural, and emotional connotations (Vingerhoets, Bylsma, & de Vlam, 2013). Profanity has a long history of use (Patrick, 1901). However, profanity has been neglected as an area of intense psychological research. Profanity is hypothesized to be used for a variety of reasons including social utility (Jay, 2009), expression of frustration (Jay & Janschewitz, 2008), and enhancing humor (Pinker, 2007). Furthermore, physiological structures in the brain seem to be associated with profanity (Van Lancker & Cummings, 1999).

Definitions and Functions of Profanity

Profanity is defined as a form of linguistic activity utilizing taboo words to convey the expression of strong emotions (Vingerhoets et al., 2013). In addition, institutions of power are responsible for defining and sanctioning profane words (e.g., government, media, religion, etc.) as well as placing restrictions on taboo words in raising children (Jay, 2009). In this research the words *profanity*, *swearing*, and *taboo words* will be used interchangeably.

Primarily, profanity is used to express emotions, particularly anger and frustration, due to the connotative nature of profane words (Jay & Janschewitz, 2008). In fact, the most common reason for using profanity is to express anger and frustration (Jay, King, & Duncan, 2006). Aggressive forms of profanity often contain religious figures

(e.g., *goddamnit*) (Patrick, 1901), gender of the target (e.g., *bitch*, *bastard*) (Pinker, 2007), and slurs based on ethnicity, race, and gender (Jay, 2009).

A second function of profanity is the expression of humor. George Carlin, a stand-up comedian, often explored aspects of profanity in his shows. One of Carlin's most famous bits was called "Seven Words You Can Never Say on Television" in which Carlin used humor in his dissection of the words the FCC determined were too vile for television. In addition, television shows like *South Park* are known for their use of explicit and excessive amounts of profanity to draw viewers (Pinker, 2007).

Research on Profanity

Research on profanity is sparse and has only recently become popular as an area of study in quantitative research (Jay, 2009). However, qualitative research on profanity dates back over 100 years (Patrick, 1901). Nevertheless, the little qualitative research on profanity has provided direction for future areas of study.

History of profanity. Patrick (1901) speculated profanity originated as emotional and verbal outbursts in the face of danger and threats and that the enunciation of these sounds evolved into actual words alongside the development of language in humanity's prehistoric evolution. Eventually, religions began codifying moral edicts against swearing into their texts. The Third Commandment in the Bible says "You shall not misuse the name of the Lord your God, for the Lord will not hold anyone guiltless who misuses his name" (Exodus 20:7, New International Version). This introduced a moral component of swearing in which using the Lord's name in vain sent the offender into eternal damnation.

The evolution of profanity and curses progressed into the Middle Ages and Renaissance, during which, while still maintaining heavily religiously oriented consequences, the offenders began incurring legal consequences (Stone & Hazelton, 2008). Since the 20th century, the legal consequences of swearing have been nearly abolished in most Western countries (e.g., the United States, Europe, Australia, etc.). Controls on profane language became a matter of institutional concern with organizations like the Federal Communication Commission (FCC) controlling what words could and could not be said on television and the radio based on their offensiveness rather than their religious connotations (Pinker, 2007).

Physiology of profanity. For words so short and simple, the use of profane words is associated with activation of several distinct regions of the brain. In addition, profane words play a part in various neurological disorders. For example, verbal tics involved in Tourette's syndrome often involve swear words (Van Lancker & Cummings, 1999). Swearing behaviors related to production and perception are primarily located in the right hemisphere of the brain even though the majority of language occurs in the left hemisphere (Van Lancker & Cummings, 1999). The reason the right hemisphere is so heavily involved with the usage of profanity is due to the abundance of structures involved with emotion in the right hemisphere (Pinker, 2007). Furthermore, when a stroke occurs in the left hemisphere and overall language is impaired, use of profanity remains intact (Van Lancker & Cummings, 1999).

Moving to individual structures, several structures of the brain contribute to different aspects of initiating or controlling the use of profanity. When swearing on impulse, the limbic system and basal ganglia engage (Van Lancker & Cummings, 1999).

The amygdala, a substructure in the limbic system, is particularly involved in the cortical production of profanity due to producing and regulating emotion being the primary function of the amygdala (Pinker, 2007). The highly emotional nature of profanity makes the involvement of the limbic system and amygdala logical (Jay, 2009).

The ability to control and inhibit using profanity, and emotion in general, occurs in the prefrontal cortex and basal ganglia (Pinker, 2007; Quirk & Beer, 2006). The prefrontal cortex regulates behavior, especially when a behavior is not socially appropriate (Jay, 2000). Profanity can yield negative social consequences when used in improper settings, thus making the prefrontal cortex an extremely important brain region when inhibiting profanity (Jay et al., 2006; Robbins, Focella, Kasle, López, Weihs, & Mehl, 2011). The basal ganglia functions as both a motivator and a regulator (Pinker, 2007). Thus, the basal ganglia may help initiate profanity, but it also determines to what degree and when profanity ought to be used.

Correlates

Social and emotional pressures influence the manner in which people use profanity. A person's age determines which profane words are socially acceptable (Jay et al., 2006). Gender differences also determine how, when, and why people use profanity (Jay, 2009; Jay & Janschewitz, 2008; Jay et al., 2006)

Age. Cursing begins at a young age during the toddler years and continues into old age, including patients with dementia (Jay et al., 2006). Children begin swearing when they first learn to speak between the ages of one year old and two years old (Jay et al., 2006). The severity of the offensiveness of swear words evolve with age from young children using words that revolve around bodily functions and mild insults to adults who

use sexual, symbolic, and political swears (Jay & Janschewitz, 2008). Even though the physiology of swearing is hypothesized to be traced back before formal language was used, swearing itself is a learned behavior from parents, family, and peers (Jay et al., 2006).

Gender. Generally speaking, males and females swear at the same rate (Jay & Janschewitz, 2008). However, there are several important distinctions regarding when and to what extent males and females swear. Males tend to be more comfortable expressing aggression and negative emotions than females; thus, generally speaking, males swear more in public than females (Jay, 2009). Furthermore, men and women swear more when in the company of people of their gender due to social comfort and a desire not to alienate the opposite sex (Jay & Janschewitz, 2008). As adolescents, boys begin using taboo words sooner than girls (Jay et al., 2006).

Emotional Regulation

Emotional regulation serves the purpose of allowing individuals to govern and exert control over their emotions (Dennis, 2007). Neurological structures are involved in emotional regulation for the production and direct control of emotions and emotional expression (Ochsner & Gross, 2008). Furthermore, several theoretical orientations including psychodynamic (Freud, 1959), behavioral (Skinner, 1954), and cognitive (Ochsner & Gross, 2008) have addressed emotional regulation and developed theoretical constructs to explain how emotional regulation is conducted.

Definition

Emotional regulation is a conglomeration of strategies individuals apply to control and modify their emotional expression (Dennis, 2007). Emotional regulation often

appears as changes to one's reactions to subjective environments due to the impact and types of stimuli in those environments (Cole, Martin, & Dennis, 2004). In other words, emotional regulation is the means by which a person selects the proper emotions and emotional expression for their current circumstances. Examples of emotional regulation include profanity, catharsis, avoidance of stressful stimuli, and mindfulness (Carver, 2004; Freud, 1959; Jay, 2009; Tang, Hölzel, & Posner, 2015). Emotional regulation has been approached from multiple perspectives in psychology including biological, psychodynamic, behavioral, and cognitive (Ochsner & Gross, 2008).

Theories of Emotional Regulation

Emotional regulation, unlike profanity, has an abundance of theories built from quantitative research. The biological theories of emotional regulation address neurological structures and their roles in emotional regulation (Ochsner & Gross, 2008). The psychodynamic theory of emotional regulation has emphasized the importance of catharsis on regulation anxiety in particular (Freud, 1959). Behavioral theories address the means by which people regulate their emotions in response to outside stimuli (Jackson, 2000).

Biological. Emotions and emotional regulation appear to have strong biological connections to specific regions of the brain (Ochsner & Gross, 2008). The region of the brain most directly associated with the production of emotions is the amygdala, a structure in the limbic system (Ochsner & Gross, 2008). The amygdala is not only responsible for the production of emotion, but it also serves as the first cortical structure to regulate emotion production (Zotov et al., 2011).

The initial source of regulation of the raw emotion is produced in the amygdala; however, finer emotional regulation occurs in the prefrontal cortex (Gross, 1998). The prefrontal cortex is thought to serve as the primary structure in regulating emotions as the result of studies in which the prefrontal cortex suffered damage (Gross, 1998). A damaged or lesioned prefrontal cortex has been associated with poor emotional control (Rolls et al., 1994). Cognitive theories emphasize application of emotional regulation strategies more heavily than the theoretical constructs of emotional regulation (Boostani, Ezadikhah, & Sadeghi, 2017).

Psychodynamic. Emotional regulation understood from a psychodynamic perspective can be traced back to Freud (1959). Freud's theories were precursors to modern emotional regulation theories. According to Freud (1959), there are two types of anxiety regulation. The first form of anxiety regulation stems from the reality principle of the ego when it is overwhelmed by external, anxiety-inducing stimuli. According to Freud (1959), people respond to and regulate their over-taxed ego through avoidance of the stimuli. The second kind of anxiety regulation emerges when the ego and superego display strong impulses for emotional expression. To respond to these desires, the person begins repressing them and engaging their ego defenses, which affects their emotional expression (Freud, 1959).

For the purposes of this research, perhaps the most important aspect of psychodynamic theory is Freud's concept of catharsis. Freud and Breuer (2004 [1940]) described catharsis as the process of engaging in explicit actions for the purpose of releasing the emotional states associated with those actions. Thus, catharsis is the primary means of emotional expression. Common forms of catharsis include shouting, sobbing,

crying, outbursts of anger, laughing when stressed, and using profanity (Popușoi, Havârneanu, & Havârneanu, 2018; Scheff, 1979).

Behavioral. Skinner (1954) theorized that humans are motivated by the presentation or removal of pleasant or unpleasant stimuli. Skinner's theories have since been expanded to explain the manner by which humans respond to emotionally charged stimuli in their environments in the form of avoiding unpleasant stimuli or attending to and pursuing pleasant stimuli (Jackson, 2000).

The Skinnerian constructs of reinforcement have evolved and become more refined through the behavioral approach system (BAS) and behavioral inhibition system (BIS) (Carver, 2004). The BAS is a set of learned behaviors in which the individual has learned to seek out a specific set of pleasant stimuli. The BIS does the opposite of the BAS in which an individual has learned to avoid and prevent themselves from seeking and experiencing unpleasant stimuli. Approaching and avoiding the antecedents associated with specific emotions is done automatically. These behavioral constructs tie into emotion regulation in the form of seeking to reproduce and recreate positive emotions for one's own health while also engaging in behaviors that make the presence of negative emotions less likely. People behaviorally regulate their emotions through antecedent and behavioral control (Carver, 2004). For example, a person with a fear of spiders severe enough to elicit panic attacks may choose to live in an extremely sterile apartment with not small spaces in which spiders can hide. Thus, the absence of the antecedent, in this case spiders, will inhibit the emotional response of fear, which will then in turn reduce the likelihood of panic attacks.

Cognitive. The previous sections of emotional regulation describe the neurological constructs, psychodynamic methodologies, and behavioral principles associated with the production and regulation of emotion. However, emotions and emotional regulation are fundamentally cognitive constructs (Ochsner & Gross, 2008). The synergy of the previous theories has since developed into both clinical and non-clinical methodologies of emotional regulation.

Acceptance and commitment therapy (ACT) is a cognitive-behavioral therapy in which an individual increases their cognitive flexibility in order better cope with life's stresses (Boostani et al., 2017). A central methodology by which ACT increases cognitive flexibility is a process called cognitive defusion in which a person minimizes the impact and influence of maladaptive thoughts on behavior (Assaz et al., 2018). Once a person has defused their maladaptive thoughts from translating into behaviors, they can begin practicing acceptance of these thoughts to diminish their effect which, will in turn regulate emotions (Spidel, Lecomte, Kealy, & Daigneault, 2018).

A second cognitive strategy for emotional regulation is mindfulness. Mindfulness, particularly meditative mindfulness, is composed of nonjudgmental attention and acceptance of experience in the present moment (Leyland, Rowse, & Emerson, 2019). Through mindfulness, one can practice emotional regulation through exerting control over their self-awareness and attention control (Tang et al., 2015).

Correlates

The abundance of research on emotional regulation strategies has shown the means in which emotional regulation is conducted are not uniform over all demographics and populations. Strategies differ by age (Asberg 2013; Kelley & Hughes, 2019;

Livingstone & Isaacowitz, 2019; Patel, Nivethitha, & Mooventhan, 2018; Zhou, Wu, & Zhen, 2017) and gender (Domes, et al., 2010).

Age. Emotional regulation strategies differ with age and levels of maturity. For example, adolescents most frequently use external expression, cognitive appraisal, and seeking the support of others to regulate their emotions (Zhou et al., 2017). Young adults and college students typically employ cognitive reappraisal and strategies for ignoring their emotions as well as hostility, anger, etc. in emotional regulation (Asberg 2013; Patel et al., 2018). Middle-aged adults typically avoid situations that will elicit negative emotions (Livingstone & Isaacowitz, 2019). Older adults tend to rely on both seeking more stable emotional experiences as well as avoiding negative emotional experiences for emotional regulation (Kelley & Hughes, 2019).

Gender. There appear to be significant gender differences in the experience and regulation of emotions. For example, women show greater amounts of activity in the amygdala, whereas men show greater amounts of activity in the regions of the prefrontal cortex (Domes, et al., 2010). This pattern of activity suggests that women tend to be more emotionally expressive than men, who are more likely to inhibit emotions.

Emotional Regulation and Anxiety

Anxiety is defined as a state of fear which may elicit avoidance behaviors and defense reactions (Saleem et al., 2019). Anxiety is divided into two forms: state and trait anxiety (Spielberger, Gorsuch, & Lushene, 1970). *State anxiety*, defined as a changeable emotional state in which the main feature are feelings of tension, worry, and apprehension along with autonomic nervous activity, was the focus of this research (Gul & Jahangir, 2019).

Several strategies for emotional regulation of anxiety have been shown to be effective. *Mindfulness*, defined as showing awareness of one's emotional state and living in the present, is one such technique (Gul & Jahangir, 2019). Meditation in particular seems to work well at regulating emotions (Gul & Jahangir, 2019). Cognitive-behavioral therapy (CBT) has also been shown to be effective as a form of emotional regulation when treating anxiety (Jazaieri, Goldin, & Gross, 2017). CBT is the use of cognitive and behavioral strategies in tandem to alter problematic cognitions and behaviors (Beck, Rush, Shaw, & Emery, 1979).

Profanity as a Form of Emotional Regulation

Swear words are hypothesized to be associated with the consequences of using the words via classical conditioning (Jay, 2003). Once a swear word is paired with an emotional response (ie., physical discipline from a young child's parents after they use a swear word), the words themselves take on an emotional meaning. Once the behavioral association is made, catharsis becomes a means by which people use swearing to regulate their emotions due to catharsis reducing the severity of the emotion felt, in this case, anxiety (Freud & Breuer, 2004[1940]).

The strongest motivator for swearing is to express negative emotions in a cathartic fashion (Rassin & Muris, 2005). Through using swearing as a form of catharsis, one makes the probability of engaging in physical aggression diminish (Jay, 2009). However, other evidence supports the hypothesis stating swearing and the catharsis effect may actually reinforce levels of aggressive engagement, thus prolonging the negative emotional state (Bushman, Baumeister, & Stack, 1999). The conflicting nature of these

results shows profanity may not be purely cathartic, and other factors may contribute to whether or not profanity effectively regulates emotions.

Swearing, particularly its cathartic properties, has shown to be effective in situations of stress and duress such as pain management (Robertson et al., 2017) and alleviating aggression and road rage (Popușoi et al., 2018). The research by Robertson and colleagues (2017) focused more heavily on the physiological aspects of swearing in which it acted as a distraction from painful stimuli and form of catharsis for negative emotions while a participant's hand was held in a bowl of ice. The research by Popușoi et al. (2018) addressed the more emotional and subjective aspects of anger and how swearing redirects and channels the anger and overall arousal away from the situation in question. Thus, it can be inferred swearing may serve as a physiological and psychological function in controlling one's emotions.

In light of the potential benefits to swearing, potential costs also exist. Qualitative research has been done supporting hypotheses stating swearing has a positive effect on social interactions in regard to social cohesion, comfort, and familiarity (Jay, 2009). However, there appear to be social costs to swearing, particularly in medical (Robbins et al., 2011) and in-patient (Stone & Hazelton, 2008) settings. In the aforementioned settings, swearing seems to make medical and nursing professionals less likely to assist a person in need due to the crass and callous nature of taboo language (Pinker, 2007). In addition, swearing seems to have an overall negative social effect when it is coupled with already trying circumstances, such as an illness (Robbins et al., 2011). However, if swearing alone is used in a setting and no social pressures against swearing are present,

the cathartic benefits seem to show functionality at alleviating subjective distress (Robbins et al., 2011).

The Current Study

This study expanded on previous research on the previous qualitative research of swearing displaying certain utilities in using swear words, such as greater social comfort with one's peers, and quantitative research of swearing, such as serving as a form of pain management. Previous research on the cathartic effects of swearing has focused primarily on physical distress and anger, leaving other avenues of research and the questions of those avenues unexplored. No previous research investigated the relationship of profanity and anxiety and whether or not profanity might serve as a strategy of emotional regulation on anxiety. This study sought to determine whether or not profanity might regulate anxiety through catharsis.

Participants were recruited from undergraduate courses in a southern university. Participants in the experimental condition were exposed to an anxiety-inducing scene from a movie. During the anxiety-inducing scene, the participants were asked to use a profane word of their choice, prompted by four red X's on the screen, and then rated their overall levels of anxiety. After the video had completed, the participants completed another short anxiety survey to determine whether or not their anxiety changed and in which direction. Overall, it was predicted that profanity would decrease levels of anxiety when compared to participants in the control condition, who used a mundane word during the anxiety-induction.

CHAPTER II

METHODS

Participants

There were 42 participants gathered from a southern university with the incentive of extra credit for their participation. Thirty-nine participants were female and three participants were male. The average age of the participants was 20 years old. The youngest participant was 18 years old and the oldest participant was 23 years old. Thirty-nine participants identified as Christian, two participants identified as agnostic or atheist, and one participant identified as unaffiliated with any religion. Twenty-nine participants identified as Caucasian, three participants identified as African American, five participants identified as Hispanic, four participants identified as Asian/Pacific Islander, and one participant identified as bi-racial.

Participant Recruitment

Participants were recruited from undergraduate psychology courses at a southern university. Participants were offered extra credit for their participation. If a student wished to receive extra credit but they were uncomfortable with participating in the experiment, they had the option to write a short paper summarizing an academic journal article about treating anxiety.

Anxiety Induction Stimulus

The anxiety-inducing stimulus was a scene from the movie *The Mist*. The video clip was 2 minutes and 38 seconds long. During the scene, there were jump-scares at 0:51

and 1:48. During these jump-scares, large red X's appeared on the corners of the screen to prompt the participant to use a profane or mundane word, depending on their condition. The scene in question had a dark atmosphere with whites, grays, and blacks as the primary colors. Thus, red X's were chosen because they were immediately visible and served as a significant color contrast. Participants were prompted by the X's to give the experiment greater control on how often the participants would swear. The timing of the X's followed jump-scares in the video. Once the scene was completed, participants completed another anxiety questionnaire to determine changes in anxiety.

Experimental Manipulation: Mundane vs Profanity Word Selection

Participants were assigned into either an experimental or control condition. Participants' assignment depended on whether or not they are comfortable with using profanity and random assignment. Participants were asked in the initial questionnaire whether or not they were comfortable using profanity. If a participant reported using profanity made them uncomfortable, they were assigned to the control condition, where they were instructed to say the word "chair" during the prompts in the video. The word "chair" was chosen because it lacked any significant emotional connotations. If a participant was comfortable using profanity, they were assigned to either the control condition or the experimental condition. However, due to the fact that participants uncomfortable with profanity were immediately assigned into the control condition, the participants comfortable with profanity were more likely to be assigned to the experimental condition to maintain equal numbers of participants between the groups. Participants in the experimental condition were asked to identify a profane word to use

during the experiment and instructed to say this word during the video prompts. There were 21 participants in each group.

Overview of Procedure

The experiment was done in a controlled environment with a rigid and specific procedure. The experiment was conducted by the primary researcher, a Caucasian male in his mid-20s. The procedure will be covered for purposes of replicability and clarity.

Room setup. Participants sat in a chair in front of a table where they completed the pretest measures. On the table was a 27-inch computer monitor that played the video clip. The monitor was connected to the experimenter's computer. The experimenter sat caddy-corner to the participant where the participant could not see the experimenter's computer screen. Participants wore noise-cancelling headphones at a volume loud enough to block out all other sounds as they watched the video.

Pre-testing procedure. Prior to being shown the video, participants were asked to read and sign the informed consent form. Participants were informed they were taking part in a study interested in studying anxiety and coping skills associated with anxiety. At this point the experimenter determined if the participants were comfortable using profanity to determine group assignment. The participants were asked to answer a question about whether or not using profanity made them uncomfortable. If the participant stated using profanity did not make them uncomfortable, they were randomly assigned. If a participant stated using profanity did make them uncomfortable, they were placed in the control condition. Participants in the control condition were instructed by the experimenter to say the word "chair" when they saw four red X's on the screen ("When you see four red X's on the screen, I want you to say the word 'chair' out loud.

Do you understand?”). Participants in the experimental condition were asked which profane word is their favorite to use (“Which swear word is your favorite?”). After the participant informed the experimenter of their favorite profane word, the experimenter instructed the participants to use their favorite profane word when they saw four red X’s on the screen (“When you see four red X’s on the screen, I want you to say [profane word] out loud. Do you understand?”).

After group assignment, participants were asked to fill out a questionnaire which contained questions of demographics (age, sex, year in college, religious affiliation, and strength of their religious affiliation on a scale of 1 to 10) and an abbreviated version of the State-Trait Anxiety Inventory (STAI), an empirically supported anxiety measure (Wiglusz, Landowski, & Cubala, 2019). The abbreviated version of the STAI contained only state anxiety questions because only state anxiety was predicted to have changed. The STAI contained the following items: I feel calm, I am tense, I feel upset, I am relaxed, I feel content, and I am worried. Participants rated their responses on a 1 to 4 scale where 1 is “Not at all” and 4 is “Very much.”

The experimenter collected the survey and once again instructed the participants to use the word they were assigned or chose depending on their condition (“When you see four red X’s on the screen, I want you to say [chair/ favorite profane word] out loud.”) Then the experimenter gave the participants a subjective units of distress scale on a piece of paper from 0 to 100 where they marked their current level of anxiety (“Place a mark on this scale of your current anxiety where 0 is none and 100 is extreme.”). At this point the experimenter presented the headphones and again reviewed the experimental procedures (“Put these on and keep them on as you watch the video. Remember to say

[chair/ favorite profane word] when you see four red X's.”). Finally, the experimenter gave the participant noise-canceling headphones which they wore while watching the video.

Experiment. The experimenter played the video with the red X's at 0:51 and 1:48. The participants said either “chair” or their profane word of choice when they saw the red X's. The red X's in the video appeared for three seconds in all four corners.

Post-test. As soon as the video ended, the experimenter instructed the participants to remove the headphones (“Take off the headphones.”) and again administered both the anxiety subjective units of distress scale (“Place a mark on this scale of your current anxiety where 0 is none and 100 is extreme.”) and the STAI.

Conclusion. The participants were thanked for their participation and asked for which class they wanted their extra credit to count (“Thank you for your participation. What class do you want your extra credit to go to?”). The experimenter recorded the participants' requested classes and the experiment concluded with the dismissal of the participant (“That concludes the experiment.”).

CHAPTER III

RESULTS

Manipulation Check: Did the Video Increase Anxiety?

Prior to hypothesis testing to determine whether or not profanity would be significantly related to decreased anxiety in comparison to controls, a test was run to see if the video increased anxiety on the two dependent variables: subjective units of distress (SUDS) and the STAI. It was predicted there would be a significant increase in anxiety in both measures of anxiety as a result of the video. To test this prediction, independent-samples *t*-tests were run comparing pretest anxiety with posttest anxiety, for STAI scores and the SUDS rating. The results of the *t*-tests can be found in Table 1. As can be seen on Table 1, significant differences were observed for both dependent measures, indicating the video increased anxiety on both scales.

Table 1
Effect of the Video on Anxiety

	<u>Pretest</u>		<u>Posttest</u>		<i>t</i>	<i>p</i>
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>		
SUDs Anxiety	54.33	39.14	77.05	36.83	4.08	.000
STAI	10.52	2.71	12.93	3.27	5.24	.000

Posttest SUDs Anxiety Scores Between Control and Profanity Groups

One of the hypotheses of the study stated anxiety would be significantly lower in the profanity group compared to the control group due to profanity being hypothesized to be a cathartic factor. In order to test this prediction, an independent-samples *t*-test was run on posttest SUDS anxiety scores comparing the control and profanity groups. Independent-samples *t*-tests were run because there were significant changes between the SUDS scores of the entire sample. The descriptive statistics for posttest SUDs anxiety scores can be found in Figure 1 and Table 2. Table 2 also contains the independent-samples *t*-tests. As can be seen in Table 2, no significant differences were found between the levels of SUDS anxiety in the control and profanity groups.

Table 2

Posttest Anxiety Scores Between the Control and Profanity Groups

	<u>Posttest Anxiety Scores</u>			
	<i>M</i>	<i>SD</i>	<i>t</i>	<i>p</i>
<i>Control</i>	74.38	39.15	.465	.645
<i>Profanity</i>	79.71	35.12		

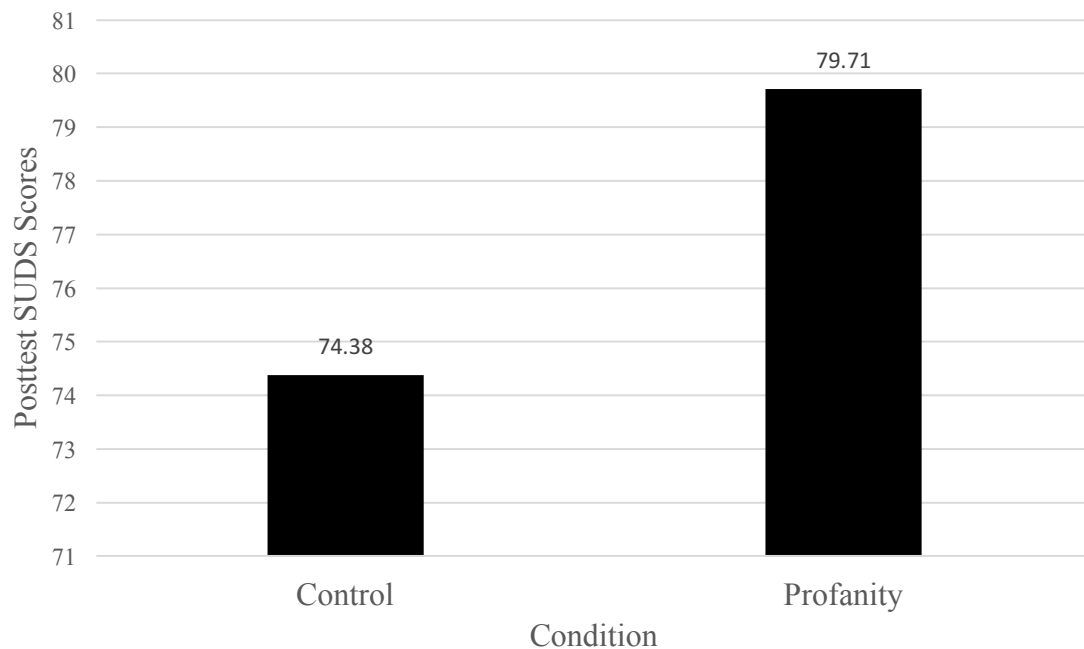


Figure 1. SUDS Scores Between Control and Profanity Groups.

Posttest STAI Scores Between Control and Profanity Groups

A second hypotheses of the study was STAI scores would be significantly lower in the profanity group compared to the control group due to profanity being hypothesized to be a cathartic factor. In order to test this prediction, an independent-samples *t*-test was run on posttest STAI scores comparing the control and profanity groups. The descriptive statistics for posttest STAI scores can be found in Figure 2 and Table 3. Table 3 also contains the independent-samples *t*-test. Independent-samples *t*-tests were run because there were significant changes between the STAI scores of the entire sample. As can be seen in Table 3, no significant differences were found between the levels of profanity in the control and profanity groups.

Table 3

Posttest STAI SCORES Between the Control and Profanity Groups

	<u>Posttest STAI Scores</u>			
	<i>M</i>	<i>SD</i>	<i>t</i>	<i>p</i>
Control	12.48	3.41	.894	.377
Profanity	13.38	3.14		

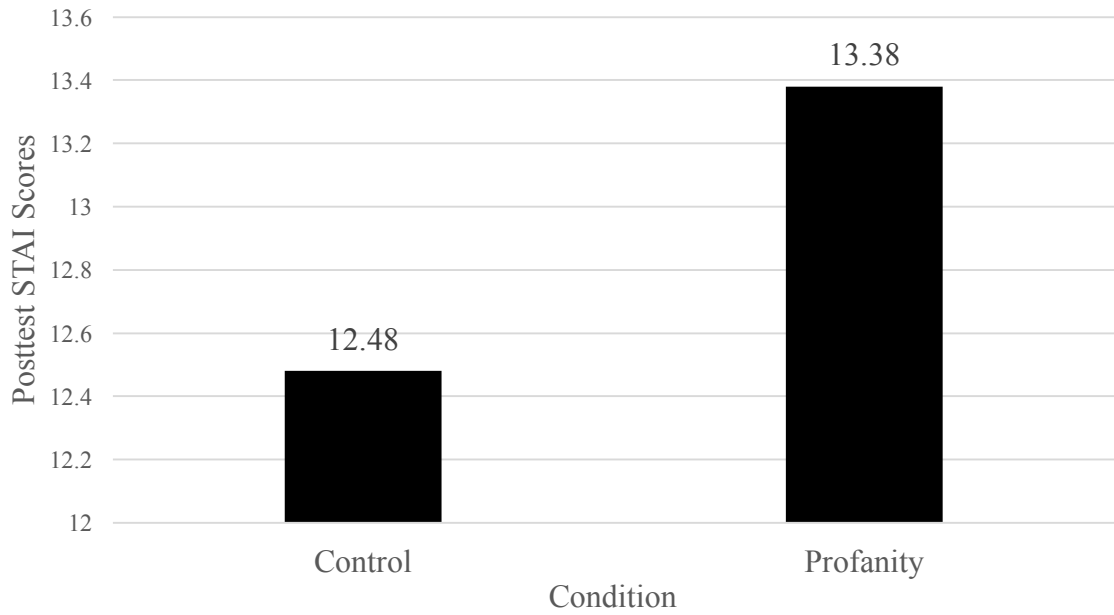


Figure 2. STAI Scores Between Control and Profanity Groups.

CHAPTER IV

DISCUSSION

Overview

Profanity's prevalence in everyday conversation and media as well as its emotional connotations make it an ideal candidate for study as a means of emotional regulation (Jay, 2009; Vingerhoets, Bylsma, & de Vlam, 2013). Profanity has been shown to be a means of expressing anger and frustration (Jay, King, & Duncan, 2006), defiance towards authority (Patrick, 1901), and expressing and communicating humor (Pinker, 2007).

Emotional regulation is a culmination of strategies utilized by individuals to control and direct their emotional expression (Dennis, 2007). Emotional regulation has been studied extensively. Research in emotional regulation has addressed it both in terms of how it is utilized (Carver, 2004; Freud, 1959; Jay, 2009; Tang, Hölzel, & Posner, 2015) as well as various theoretical backgrounds. Such theoretical backgrounds include the biology of emotional regulation (Ochsner & Gross, 2008), psychodynamic explanations, particularly catharsis (Freud & Breuer, 2004 [1940]), behavioral systems of approach and avoidance of anxiety-inducing stimuli (Carver, 2004), and cognitive strategies such as ACT (Assaz et al., 2018) and mindfulness (Tang et al., 2015). Research on emotional regulation has also focused on anxiety as a means of treating anxiety through emotional regulation strategies (Beck, Rush, Shaw, & Emery, 1979; Gul & Jahangir, 2019; Jazaieri, Goldin, & Gross, 2017).

However, no research had explicitly studied profanity and its potential influences on emotional regulation. This experiment was conducted to attempt to determine if profanity can serve as a means of emotional regulation through reducing levels of anxiety in an anxiety-inducing situation. It was hypothesized using profanity in an anxiety-inducing situation would have a cathartic effect and thus reduce anxiety.

Participants were gathered from a southern university to take part in the experiment for an opportunity to earn extra credit. The participants were to watch a scene from the movie *The Mist*, which was intended to increase levels of anxiety. Participants' anxiety was measured through a subjective units of distress scale and the STAI, both of which they received before and after watching the video.

The participants were assigned to an experimental or control condition based on their reported comfort, or lack thereof, in using profanity. Participants who were not comfortable using profanity were assigned to the control condition. Participants who were comfortable using profanity were randomly assigned to the experimental or control condition. In the control condition, participants were instructed to say the word "chair" at specific points in the video. Participants in the experimental condition were instructed to say a profane word of their choice at the same specific points in the video. The indicators for saying "chair" or their favorite profane word were four large red X's on the screen for three seconds, one in each corner of the screen.

It was predicted that participants in the profanity condition would have lower posttest anxiety ratings, on both the SUDs rating and STAI, compared to participants in the control condition. Overall, the manipulation of using the scene from *The Mist* worked in increasing anxiety, as seen in Table 1. However, the research predictions were not

supported. As can be seen in Table 2 and Table 3, profanity use had no effect on reducing anxiety when measured through a subjective units of distress scale and the STAI.

Limitations and Observations

Given the failure of the experiment in supporting the hypotheses of profanity serving as a form of emotional regulation, potential reasons for the failure ought to be explored. The most obvious design limitation was the limited sample size. There were only 21 participants in each condition resulting in limited power. The problem of low power becomes more concerning due to the high levels of variability in the subjective units of distress measure. Individual participants would vary in their pretest and posttest scores with some reporting consistently low, some reporting consistently high, and some reporting high-to-low or low-to-high scores of varying degrees. Thus, without a significantly massive sample size, the data showed low levels of consistency in both conditions.

Beyond statistical power, there may be cultural issues that affected the outcome of the study. Profanity has heavy cultural connotations, and thus the impact of the use of profanity will change as the culture changes (Jay, 2009). Furthermore, the location of the study could have served as a confound for cultural reasons.

Specifically, what is considered profanity and profane is often a reflection of the current cultural evolution at any given time (Patrick, 1901) and thus profanity, and the offensiveness and emotional impact of the words themselves, will also evolve and change. The most salient example of this natural cultural evolution is the words the participants in the profanity condition chose as their favorite words. Eleven out of 21

participants in the profanity condition chose the word “fuck” as their favorite profane word. “Fuck” has been seen as the most offensive of non-racial profane words for decades (Pinker, 2007). However, young adults chose the traditionally most profane word more than any other. From this, it seems the “traditional” profane words (ie., fuck, shit, damn, ass, bitch, etc.) could very well be losing their emotional weight as they become more acceptable for daily use. Consequently, if certain words are losing or have lost their emotional connotations, then the cathartic effect of those words may be gone.

An alternate, and indeed opposite, explanation to the emotional numbing of profane words as being a contributor to not seeing significance could be the location of the study itself. The study was conducted at a southern Christian university. Religion has a long trend of demonizing taboo language (Patrick, 1901; Pinker, 2007). Thus, given the immense strength of religious affiliation seen in the southern United States, as reflected by the data in this study (8.32 out of 10 with 10 being the strongest), it is entirely possible asking the participants to use profanity may have had an anxiety-inducing effect and thereby contaminated the results.

Future Direction

First and foremost, any research using highly subjective units of measurement should have at least 50 participants per condition, if not more, to control for high statistical variability in the self-reports. Highly rigorous and precise physiological measures should be considered as well. Before any study resembling the research conducted in this area should be undertaken, research should be done to determine if the profane words used in this study have a strong emotional impact on people who use them. A study in which people say profane and mundane words while undergoing a variety of

physiological and psychological measures, such as an EEG and subjective units of distress scale, should be given strong consideration. Furthermore, location should be considered when conducting the research. It may behoove future research to be conducted in less heavily religious areas, such as major cities in the northern half of the United States and the coasts. Finally, statistically significant and powerful measures should be put in place to control for as many confounding variables as possible including, but not limited to religious affiliation, frequency of use of profanity, social and cultural acceptability of use of profanity in the participant's everyday life, and reasons for using profanity in everyday life.

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APPENDIX A

IRB Approval Letter

ABILENE CHRISTIAN UNIVERSITY

Educating Students for Christian Service and Leadership Throughout the World

Office of Research and Sponsored Programs
320 Hardin Administration Building, ACU Box 29103, Abilene, Texas 79699-9103
325-674-2885



January 23, 2020

Nicholas Gregorich
Department of Psychology
Abilene Christian University

Dear Nicholas,

On behalf of the Institutional Review Board, I am pleased to inform you that the changes you requested on the Study Amendment Form dated 1/8/2020 for the project titled

"F#@&!: Profanity as a Means of Reducing Anxiety",

(IRB# 19-115) have been approved on 1/23/2020 by expedited review. The changes requested and approved are summarized below:

Title of study is being changed to "'F#@&!: Profanity as a Means of Emotional Regulation".

If you wish to make any further changes to this study, please complete a new Study Amendment Request Form.

I wish you well with your work.

Sincerely,

Megan Roth

Megan Roth, Ph.D.
Director of Research and Sponsored Programs

APPENDIX B

Material Used by Experimenter

Condition:

Comfortable with profanity: Yes No

Favorite profane word: _____

APPENDIX C

Materials Given to Participants

Age: _____

Biological Sex Assigned at Birth (circle one): Male Female

Year in college (circle one): Freshman Sophomore Junior Senior

Ethnicity/Race (circle one):

Caucasian African American Native American Asian/Pacific Islander
Hispanic Bi-racial Other (please specify):

What is your religious affiliation?:

Christian Muslim Jewish Buddhist Hindu
Agnostic/Atheist Unaffiliated Other (please specify):

On a scale of 1 (Not at all) to 10 (Extremely), how positive do you feel about your religious affiliations?

A number of statements which people have used to describe themselves are given below. Read each statement then circle the appropriate number to the right of the statement to indicate how you feel *right now*, that is, *at this moment*. There are no right or wrong answers. Do not spend too much time on any one statement but give the answer which seems to describe your feelings best.

	Not at all	Somewhat	Moderately	Very much
1. I feel calm	1	2	3	4
2. I am tense	1	2	3	4
3. I feel upset	1	2	3	4
4. I am relaxed	1	2	3	4
5. I feel content	1	2	3	4
6. I am worried	1	2	3	4

Place a mark on the following line representing your anxiety **right now** where 0 is no anxiety at all and 100 is extreme amounts of anxiety:

0

100



Place a mark on the following line representing your anxiety **right now** where 0 is no anxiety at all and 100 is extreme amounts of anxiety:

0

100

Not at all Somewhat Moderately Very much

- | | | | | |
|-------------------|---|---|---|---|
| 1. I feel calm | 1 | 2 | 3 | 4 |
| 2. I am tense | 1 | 2 | 3 | 4 |
| 3. I feel upset | 1 | 2 | 3 | 4 |
| 4. I am relaxed | 1 | 2 | 3 | 4 |
| 5. I feel content | 1 | 2 | 3 | 4 |
| 6. I am worried | 1 | 2 | 3 | 4 |

APPENDIX D

Script

Please read and sign this Informed Consent Form.

Give Informed Consent.

Get the Informed Consent once they're done.

The purpose of this experiment is to study anxiety and potential coping skills associated with anxiety. Are you comfortable using profanity?

Record their answer.

If the answer is yes: Which swear word is your favorite?

Record their answer.

You will watch a video. When you see four red X's on the screen, I want you to say [chair/favorite profane word] out loud. Do you understand?

Please complete this questionnaire.

Give the questionnaire.

Once they complete the questionnaire: I will take that.

Take the questionnaire.

When you see four red X's on the screen, I want you to say [chair/favorite profane word] out loud.

Place a mark on this scale of your current anxiety where 0 is none and 100 is extreme.

Give the slider.

Put these on and keep them on as you watch the video. Remember to say [chair/favorite profane word] when you see four red X's.

Give the headphones. Begin the video.

Once the video is completed. Take off the headphones. Place a mark on this scale of your current anxiety where 0 is none and 100 is extreme and fill out the questionnaire.

Give them the final measure.

Thank you for your participation. What class would you like your extra credit to go to?

Record their answer.

That concludes the experiment