

Examining Whether Self-Enhancing Humor has an Effect on Mood changes in Students Under Stress

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Abstract

Self-enhancing humor is positively associated with self-esteem, self-efficacy, and positive affect. Literature states that individuals who engage in self-enhancing humor styles commonly experience decreased anxiety and depressive symptoms. No study yet, has directly examined whether there is an effect of self-enhancing humor on mood in students under stress. In the study discussed in this thesis, it was predicted that individuals with low self-enhancing humor would experience greater changes in mood, both positive and negative affect, when under stress. Thirty-four (26 female and 8 male) social sciences students, of minimum bachelor level, participated in this study. The Humor Styles Questionnaire (HSQ) was used to assess selfenhancing humor style. All participants completed the Positive and Negative Affect Schedule (PANAS) online prior to either a stress or control task to which they were randomly assigned. During the stress task, participants were given 12 minutes to prepare a 5-minute speech on ANOVA analyses with the aid of a textbook, as literature suggests the anticipation alone of preparing for a public speaking task induces stress in lieu of performing a speech. The control task participants were asked to read about ANOVA analyses from the textbook for a 12-minute period. Following both tasks, participants were asked to complete the PANAS once more and were debriefed about the study. Participants' responses were analysed in SPSS using a multivariate analysis of variance (MANOVA), with time and condition as independent variables and humor as a covariate factor. Results indicated that condition had no significant effect on affect across time measures. Using humor as a covariate factor, there was no significant effect over time, over condition or involving the interaction between time and condition. A Pearson correlation indicated a significant association between affect and fear of public speaking, but no significant association between affect and fear of statistics or interest in statistics. The design and execution of the study may have affected the validity of results.

Key words: Humorous Coping, Self-enhancing Humor style, Stress, Positive Affect, Negative Affect

Laughter is the best medicine, or so the common proverb suggests. It has long been believed that humor is a significant resource for improved well-being (Martin, Kuiper, Olinger & Dance, 2009). Sense of humor, as a positive psychological concept, refers to the general tendency to laugh or make jokes, and to one's innate ability to make light of life's incongruences (Leist & Müller, 2012). When faced with adverse events, it is thought that by adopting humor an individual is better able to cope with and overcome a challenging situation (Martin, et al., 2009). According to past research, exposure to humorous stimuli can reduce negative feelings and counteract induced depressed moods (Martin & Ford, 2018). The current study seeks to investigate coping through humor and the relationship self-enhancing humor may have with mood.

Humor, as a multifaceted concept, has two central notions: humor appreciation - the ability to interpret and enjoy humorous stimuli produced by others, and humor production - the ability to create and convey humor (Martin & Lefcourt, 1983). Past literature into humor appreciation suggests that exposure to humorous stimuli reduces feelings of anger, aggression, subjective anxiety and induced depression (Cann & Collette, 2014). It was posited that humor production can buffer stress, and increase positive affect, thus, enhancing the well-being of an individual (Martin et al., 1983).

Sense of humor differs greatly between individuals, both in their ability to comprehend and communicate jokes, and in the manner in which humor appreciation affects their emotional temperament and attitude (Martin et al., 2009). In 2003, to categorise humor-related behaviour in terms of possible social and personal outcomes, Martin and colleagues developed the Humor Styles Questionnaire (HSQ). This questionnaire measures humor used to enhance oneself versus to enhance relationships with others, and positive humor versus negative humor (Martin

et al., 2009). The HSQ divides humor into four styles including self-enhancing humor, affiliative humor, aggressive humor and self-defeating humor.

Substantiating claims of the correlation between humor and improved well-being has proven challenging, (Doosje, Landsheer, de Goede, & van Doornen, 2012) in that not all components of humor are associated with improved psychological well-being (Kuiper & Martin, 1998). Specifically, self-enhancing humor, one of four established humor styles, can be used as a means of reducing negative cognitive and emotional responses to adverse life events (Martin, Puhlik-Doris, Larsen, Gray, & Weir, 2003). In contrast to self-defeating, aggressive and affiliative humor styles, self-enhancing humor is described as intrapersonal and self-directed humor, stemming from the tendency to adopt a humorous perspective on life events (Martin et al., 2003). By elevating self-esteem, increasing positive emotions and regulating negative affect (Martin et al., 2009), self-enhancing humor can be used as a means of reducing negative cognitive and emotional responses to adverse life events. Individuals who tend to engage predominantly in self-enhancing humor are typically able to make light of stress and challenges, adopting a general comical outlook on the world (Martin et al., 2003).

Literature has conceptualised self-enhancing humor as enabling a sudden shift in cognitive perspective, allowing individuals to find similarities between two contrasting perspectives which would ordinarily be considered separate from one another (Lefcourt et al., 1991). This rapid reconfiguration is believed to challenge and change cognitive perspective, thereby alleviating some or all of the perceived stress (Lefcourt et al., 1991). The acknowledgement of humorous coping as an adaptive coping mechanism has prompted the use of humor in psychotherapy (Lefcourt et al., 1991), allowing individuals to express ideas that may otherwise have been too sensitive to air or socially impermissible (Lefcourt et al., 1991).

Studies investigating how humor measures are related to the cognitive appraisal of stress state that individuals with lower humor tended to perceive stressful events as more of a

threat when compared to individuals with high humor who perceived such events as more of a challenge (Kupier, Martin & Olinger, 1993). As a moderator for stress, self-enhancing humor provides the potential to conserve emotional energy and negative affect which may typically be evoked during perceived stress (Lefcourt & Davidson-Katz, 1991).

Mood, or affect, is a temporary state of mind that is highly susceptible to change (Cann et al., 2014). It is separated into two central concepts: positive affect and negative affect. According to past research, exposure to humorous stimuli can reduce negative affect (Martin et al., 2018). As stated previously, not all facets of humor are psychologically beneficial (Kuiper et al., 1998). Given that self-enhancing humor is believed to alleviate negative cognitive and emotional responses to stress, the current study seeks to investigate whether self-enhancing humor has an effect on mood, both positive and negative affect, amongst students under stress. University students were chosen as the sample population for the current study given their accessibility, and given their susceptibility to considerable stress during their studies (Bolger, DeLongis, Kessler, & Schilling, 1989).

During periods of significant stress, conserving emotional energy and negative affect can greatly advantage an individual. A greater understanding of the relationship between self-enhancing humor and mood during induced stress may also provide insight into the further development of the use of humor in psychotherapy and in psychoeducation. As a positive psychology study, a clinical implication from the present study could be the mindful and conscious engagement of self-enhancing humor so as to alleviate negative emotions and prevent the onset of adverse outcomes to stress.

The present study employed an experimental design and assigned participants into one of two experimental conditions, the stress condition or the control condition, representing the independent variable. A faux-public speaking task was used to induce stress amongst participants in the stress condition. According to a 2001 study, the anticipation involved in

preparing for a public-speaking task has been proven enough to induce stress (Knight & Rickard, 2001) even in the absence of preforming said speech. The dependent variables included self-report variables of mood, assessed across time, and self-enhancing humor.

Based on previous literature, it was predicted that condition would significantly effect mood; that following the stress task there would be a greater change in both positive and negative affect when compared to the control task. Given this prediction, it was hypothesised that self-enhancing humor would significantly effect positive and negative affect in the stress condition. Specifically, it was predicted that negative affect would decrease amongst individuals who tend to engage in self-enhancing humor while positive affect would remain relatively unaffected, and that this variance in affect would be lesser amongst participants who tended to use self-enhancing humor in comparison to those who do tend to use self-enhancing humor, buffering negative emotional response to stress.

Methods

Design

The current study employed an experimental design, with both between-subjects and within-subjects measures. It consisted of a Randomised Control Trial (RCT) study with questionnaires for positive and negative mood, and humor styles. All participants were administered the HSQ to assess self-enhancing humor, the PANAS both prior to and following a stress task to assess mood, and a demographic questionnaire to determine age, gender and highest level of education of participants. Participants were randomly assigned into the stress or the control condition.

Participants

Thirty-four international students, 26 female and 8 male, from the Utrecht University in the Netherlands chose to participate in the study for either 0.5 credits toward their social sciences course or their inclusion in a prize draw for a €50 retail voucher for De Bijenkorf. The mean age of the sample was 25.0 years (SD = 2.4) with a range of 18–35 years. Participants were randomly assigned to either the stress condition (N=18), or the control condition (N=14), with one drop out participant and one outlier participant removed from the final dataset. According to a power analysis, 96 participants were required to see a significant effect. Inclusion criteria consisted of students, of at least Bachelor level, who were 18 years or older and were studying social sciences ensuring the necessary understanding of basic statistical principles.

Recruitment

Given the nature of the stress task, the academic background of participants was important. Social sciences students of at least bachelors level were recruited via SONA, through flyer distribution, social media outreach and by personal recruitment at the Uithof campus, Utrecht University. Prior to commencing the study, participants were informed that the study was a positive psychology study aimed at investigating individuals' humorous coping.

Materials

The Humor Styles Questionnaire (HSQ) developed by Martin et al., in 2003, was used to measure the four styles of humor encompassed in sense of humor as a trait. These include Affiliative humor, inclusive, positive humor aimed at building social relationships, Aggressive humor, directional humor aimed at belittling others, Self-defeating humor, deprecating humor aimed at gaining at the favour with others at one's own expense, and Self-enhancing humor, positive humor aimed at overcoming stresses and changing perspectives.

The scale involves 32-items with four sub-scales, each consisting of 8 items with examples aimed at distinguishing the four humor styles. For example "Even when I'm by myself, I'm often amused by the absurdities of life". Each item is self-ranked on a 7-point scale from 1 = totally disagree to 7 = totally agree. For the present study, self-enhancing humor was isolated. This questionnaire has been shown in previous work to have construct validity and to have good internal reliability (with alphas ranging from .77 to .81) (Martin et al., 2003).

The Positive and Negative Affect Schedule (PANAS) (Watson, Clark, & Tellegen, 1988) is a self-report questionnaire consisting of two 10-item scales used to assess mood. The measure provides separate measures for positive and negative affect. Positive mood items include: interested, excited, strong, enthusiastic, proud, alert, inspired, determined, attentive and active. Negative affect items include: distressed, upset, guilty, scared, hostile, irritable, ashamed, nervous, jittery, and afraid. Each item is ranked from $1 = Very Slightly/Not \ at \ All$ to 5 = Extremely, with scoring divided into positive and negative affect. The PANAS is known to have construct validity and to have high internal reliability (r = 0.94) (Crawford & Henry, 2004).

During data collection, a distinct grouping was witnessed through interacting with participants based on three factors: fear of statistics, fear of public speaking, and general interest/investment in public speaking. Accordingly, these factors were measured on a Likert-scale and used in covariate analyses. Using email addresses linked to each participant, individuals were asked the following: "Please rate your fear of statistics from 1-5, 1 being not afraid at all, 5 being very afraid." "Please rate your fear of public speaking from 1-5, 1 being not afraid at all, 5 being very afraid." "Please rate your interest in statistics from 1-5, 1 being not interested at all, 5 being very interested."

Procedure

The purpose of the study was concealed from participants until the completion of each session. Prior to entry into the laboratory, participants were randomly assigned to one of two conditions using an online random number generator, either the stress condition or the control condition. After informed consent was received, participants were asked to complete a demographic questionnaire in order to obtain information about gender, age, and the highest level of education of participants. Participants were then asked to complete the HSQ and the initial PANAS. Participants were then informed of the task they were to complete, either stress or control. Following the completion of the task, participants were asked to complete the PANAS for a second time. Participants were individually tested. All measures were taken online using the Qualtrics system. Following both control and stress trials, the discretion of participants was requested so as to retain the naivety of peers who also chose to participate in the future, and debriefing occurred.

Stress Task

Participants were informed that, given their level of education, literature states they should possess a basic understanding of statistical principles (Knight & Rickard, 2001). Participants were asked to take 12-minutes to read and prepare a 5-minute oral presentation on the topic of ANOVA analysis principles. Participants were told that their speech was to be recorded and later assessed by both researchers and another member of staff from Utrecht University. A video camera and tripod were set up in the laboratory to facilitate participants' belief that the speech was to be recorded. To prepare for the speech, participants were provided with blank paper, a pen, and a copy of Discovering Statistics Using SPSS Statistics (Field, 2013) open at Chapter 12: ANOVA.

Due to usual natural circadian rhythms, all trials were conducted between the hours of 10.00 and 14.00 so as to test participants at their highest cognitive functioning (Helbig & Blackhaus, 2001). The task was chosen to minimise gender differences between males and

females in their stress response (Starcke, Wolf, Markowitsch & Brand, 2008), as both males and females were supposed to be well trained in the areas of oral presentation and statistics (Helbig et al., 2001). Given that the anticipatory stress associated with preparing for a public presentation itself has been deemed an effective stressor, the second PANAS was administered immediately following the preparation period so as to assess changes in mood (Knight & Rickard, 2001: Absi et al., 1997). Participants were then informed that they did not, in fact, need to perform a presentation and were debriefed accordingly.

During the stress task trials, the following script was used to provide participants with the necessary information:

"Welcome, thank you once again for your participation. The following experiment is a positive psychology study. The experiment will last 25-30 minutes and consists of two parts; completing questionnaires and a short task related to your field of study. After the experiment is complete we will collect your email address for entry into the prize draw or for you to receive 0. 5 course credits toward your psychology studies.

All questionnaires, as well as the informed consent, will be presented to you online. Before you begin please carefully read and agree or disagree to give your informed consent. This will provide you with further information about what the study entails."

After informed consent:

"Given your field of study, literature suggests that you should possess basic knowledge statistics. We ask that you please read the following Chapter (5) on the principles of ANOVA analyses, so as to prepare to deliver a 5-minute speech to a camera that will be played back and examined by the research team. For this you will be given 12 minutes."

After 12 minutes elapse:

"The 12 minutes are up. We now ask that you complete one further questionnaire before we proceed to the speech."

PANAS 2

Following the completion of the stress task trials, participants were provided with the following information:

"Thank you for your participation in our study. You are not required to perform the speech. That task was designed to heighten your stress level with the hope of altering your mood during the preparation period.

How are you feeling following the presentation?

Do you want to discuss the stress you felt?

Thank you again for your participation."

Control Task

Control participants were presented with a blank piece of paper, a pen, and a copy of Discovering Statistics Using SPSS (Field, 2013) open at Chapter 12: ANOVA. Participants were given 12-minutes to read, think and write about anything they previously knew, or learnt in the process, about the principles of ANOVA analyses. So as to avoid the onset of any stress response, participants were informed that anything they wrote would remain confidential in that their responses would not be viewed by anyone.

During the control trials, the following script was used to provide participants with the necessary information:

"Welcome. Thank you for agreeing to participate in our study. First, we ask you to complete the informed consent form- please read through it carefully and sign it if you agree. Now we ask that you complete the following questionnaires before we begin. Given your field of study, the following task was chosen with the assumption that you will have a sufficient knowledge on the subject. In front of you is a statistics text book. We ask you to now read about and write what you know about the principles of ANOVA statistical analyses. The task is only for you, no one will read your notes, and at the end of the study you will take them away with you. You will have 12 minutes for this task and we ask that you complete it in silence. Now we ask you once again to complete the following questionnaire."

Following the completion of the control trials, participants were provided with the following information:

"The study is now complete and you are free to leave. Thank you for your participation. We ask that you please refrain from telling any of your peers what our study entails. You just completed the control group task. Our study is aimed at investigating the effect of the traits of humor style and mindfulness on mood in students under stress. If you are interested in hearing about the results we will add you to our email list."

Results

Data were collected in Qualtrics and exported to SPSS, version 24,- a software program used to calculate statistics- where all analyses were conducted. Prior to conducting analyses, data were examined to find outliers. One participant was excluded from further analyses with a PANAS score greater than 2 standard deviations away from the mean. Initial analyses separated by gender showed no significant differences between male and female participants for the measures used. Therefore, male and female participants were combined for the analyses.

Positive Affect Scores in stress condition were (p = 0.609) on initial measure and (p = 0.711) upon secondary measure, and in control condition were (p = 0.515) on initial measure and (p = 0.820) upon secondary measure. Negative Affect Scores in the stress condition were (p = 0.989) on initial measure and (p = 0.371) upon secondary measure, and in control condition were (p = 0.793) on initial measure and (p = 0.118) upon secondary measure. Meaning that both PANAS scales met the assumptions of normality for both the stress and control conditions.

A multivariate analysis of variance (MANOVA) was performed using time and condition as independent variables. Based on the Wilk's lambda criterion, the dependent variable of condition had no significant effect on change in positive affect (F(1, 33) = 1.39, p > .05), nor change in negative affect (F(1, 33) = 1.79, p > .05). These results indicate that the assumption of homogeneity of covariance was violated.

There was no significant interaction between positive affect and condition (F(1, 33) = 1.02, p > 0.05), nor between negative affect and condition (F(1, 33) = 0.32, p > 0.05). The interaction between condition and time did not significantly effect positive affect (F(1, 33) = 0.94, p > .05), nor negative affect (F(1, 33) = 0.90, p > .05). In other words, the interaction effect was not significant. Given that only one degree of freedom exists for each effect, the Pillai's, Hotelling's, and Wilks' tests all produce the same F.

Self-enhancing humor as a covariate factor was added to the multivariate analysis of variance (MANOVA) was performed. According to this analysis, there was no significant effect of humor on positive affect ($F(6, 359) = 0.49, p > .05, \eta_p^2 = 0.41$), nor on negative affect ($F(6, 359) = 0.49, p > .05, \eta_p^2 = 0.057$). Using humor as a covariate factor, there was no significant effect over time, over condition or involving the interaction between time and condition.

A correlation matrix was computed to examine the association between mood and self-reported fear of statistics, fear of public speaking and interest in statistics. Results of the Pearson correlation indicated that there was no significant association between fear of statistics and change in positive affect (r(14) = 0.25, p = 0.38), nor between fear of statistics and change in negative affect (r(14) = 0.13, p = 0.65). The Pearson correlation also indicated that there was no significant association between interest in statistics and positive affect (r(14) = 0.01, p = 0.97), nor negative affect (r(14) = 0.11, p = 0.71). Finally, the results of the Pearson correlation indicated that there was significant association between fear of public speaking and positive affect (r(14) = 0.57, p = 0.03), and a significant association between fear of public speaking and negative affect (r(14) = 0.65, p = 0.01).

Discussion

The purpose of the current study was to examine whether self-enhancing humor had an effect on positive and negative affect amongst students under induced stress. Based on past literature, it was hypothesised that under stress induced by a cognitive task, self-enhancing humour would significantly effect both positive and negative affect across time increments. Specifically, it was predicted that under stress, participants who tend to use self-enhancing humor would experience and lesser change in positive and negative affect when compared to those who do not tend to use self-enhancing humor.

The results of a 2 x 2 Mixed Analysis of Variance showed that in both conditions, there was no significant difference in change in positive nor negative affect, suggesting that there was no significant effect of condition across time periods. Accordingly, the null hypothesis was able be rejected, that following the stress task, there would be a greater change in both positive and negative affect when compared to the control task.

Despite this apparent lack of variance of affect across condition, further analyses were conducted with self-enhancing humor added as a covariate factor. Data showed that there was no significant effect of self-enhancing humor on mood amongst participants in either the stress condition or control condition. In concordance with previous literature, it was predicted that self-enhancing humor would positively effect both positive and negative affect. According to these data, however, this hypothesis was able to be rejected.

In order to account for the lack of effect of condition, a Pearson's correlation matrix was computed. The correlation matrix showed that there was no significant association between self-reported fear of statistics and change in affect, nor between interest in statistics and change in affect. There was, however, significant negative association between self-reported fear of public speaking and change in both positive affect and negative affect. According to these correlational findings, it could be implied that individuals who reported a greater fear of statistics, have a greater emotional response and, in turn, may be more susceptible to changes in mood.

As was reviewed in the introduction, past literature suggests that negative affect and depressive moods were alleviated by the presence of humorous stimuli. Contrary to predictions based on these findings, the current study yielded results suggesting that neither positive nor negative affect were significantly affected by self-enhancing humor. In fact, data showed that no significant change in affect, either positive or negative, was found. In this way, the

predictions of the study were not confirmed and the hypotheses could not be supported due to the overall lack of variance found in affect across both time and condition.

These unexpected results were likely due to limitations in the experimental design, particularly in the choice of stress and control tasks, the execution of said tasks, and in data collection.

A paramount error made during the current study was in the application of the PANAS questionnaire. Literature states that the PANAS can be altered to suit different contexts, using a number of different time frames. When first entering the PANAS into Qualtrics to create the online questionnaire, the incorrect wording was used. In this experiment, the phrasing should have been altered from "to what extent do you feel this way during the past week" to read "to what extent do you feel this way right now, that is, at this present moment?" (Watson, et al., 1989). With the period of the entire previous month in mind, participants' moods would not have altered over such quick succession. On average, 16 minutes elapsed between completing the first and the second PANAS measure. Given that mood is a highly malleable and changeable concept, it is possible that the mood of participants changed with their outlook on the completed task, irrespective of wording. However, the phrasing of the PANAS could have greatly violated the test-retest validity of the PANAS across time points, thus accounting for the unexpected lack of effect of condition.

Regarding the design of the study, emerging evidence from studies in cognitive performance suggests that the psychological state of an individual, such as frustration, anxiety, fear and boredom, can account greatly for systematic error (Ahn & Picard, 2006; Hudlicka, 2003; Kapoor, Burleson, & Picard, 2007). Subjects in the control condition were presented with a seemingly neutral task, parallel with that presented to the participants in the stress condition. However, given that the PANAS questionnaire was incorrectly calibrated, systematic bias may account for the change in affect contrary to what was expected.

The study suffers from several limitations regarding measurement validity. Foremost, all of the measures used in this study were self-report, which are consistently subject to hind-sight bias or influence by memory (Adams, Soumerai, Lomas, Ross-Degnan, 1999). Despite the known reliability of the PANAS measurement, the aforementioned error in phrasing of the questionnaire may have compromised introspective ability to assess their state in the instant. Moreover, having being informed that the present study was a positive psychology study prior to the commencement of the study, self-report responses to the HSQ may have been subject to response bias. Should the study be replicated, the term 'positive psychology' should be left out of the study briefing in order to prevent possible response bias.

During data collection, numerous participants had difficulty comprehending words used in the questionnaires. The 18th item of the PANAS "Jittery". After the 5th participant we began providing the following definition for the term Jittery: *adjective*, nervous or unable to relax. Experimenters provided their own definitions of these terms, with no record kept, nor any formal rigidity in semantics. Difficulty interpreting items in the PANAS could have resulted in a marked change in mood due to frustration or irritation. The demographic questionnaire did not include native language, culture or ethnicity, which otherwise could have been corrected for during analyses. Though it was not measured, experimenters observed that a lot of participants were international students. Despite this, results were not subject to cultural differences given that literature states the HSQ is stable across cultures in terms of both personality traits and psychological well-being (Kazarian, et al., 2004).

During all trials a video camera was present in the Laboratory. This was aimed at making the public speaking task more realistic as means of heightening stress induced amongst participants in the stress condition. The camera may not have been an effective prop for participants in either condition. For participants in the control condition, the presence of a camera may have inadvertently induced stress upon participants during the neutral task. Given

the number of participants who were peers of the experimenters in the same study programme with similar prior knowledge bases, participants in the stress condition may have been able to deduce the purpose of its presence, alleviating stress and influencing both positive and negative affect. Consequently, the internal validity and the experimental realism of the present study appeared weak.

It should also be noted that the present study is limited, in that participants consisted of a convenience sample and had limited generalisability to the target population as a whole. According to a power analysis, 96 participants were required to see a possible significant effect. The sample size of the current study, after removing the single drop-out and the single outlier, was 32. Beyond the limited sample size, due to the evident difficulty during participants recruitment, a high proportion of participants were friends or acquaintances of the experimenters. Subsequently, it is possible that a selection bias occurred. Lazarus and colleagues (1966) stated that the adverse outcomes associated with stress, are alleviated in the presence of interpersonal relationships.

For the aforementioned reasons, the present study yielded results contrary to what was predicted. The study assessed self-enhancing humor as a trait-like variable amongst individuals based off scores from the HSQ, a self-reporting scale. Should this research be replicated, alternative approaches to assessing humor such as behavioural observations or experimental manipulations may be more instructive. At the least, a multi-method approach is called for. Moreover, given the negative association between fear of public speaking and both positive and negative affect, this could be corrected for following covariate analyses. Alternatively, if the sample size were to be increased, fear of public speaking could be used as an inclusion criterion, increasing the likelihood of condition having a significant effect on mood.

Future research could also investigate the effect of all four humor styles on affect.

Particularly, self-defeating humor and the tendency to "laugh at one's self" may mirror past literature in the buffering of negative intensions and emotions more than self-enhancing humor appeared to in the present study.

As was theorised in the introduction, the current study sought to investigate if self-enhancing humor had an effect of positive and negative affect among students under stress. The results of the current study in general did not support the notion that self-enhancing humour effected affect, irrespective of time and condition. Had the present study yielded data with statistical significance, results could have contributed to the further development of self-enhancing humor being used to psychology therapy and in psychoeducation, in the regulation of mood. Further research into this concept is necessary for such conclusions to be drawn.

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References

- Abouserie, R. (1994). Sources and levels of stress in relation to locus of control and self-esteem in university students. *Educational Psychology*, 14(3), 323–330.
- Adams, A., Soumerai, S., Lomas, J. and Ross-Degnan, D. (1999). Evidence of self-report bias in assessing adherence to guidelines. *International Journal for Quality in Health Care*, 11(3), pp.187-192.
- Bolger, N., DeLongis, A., Kessler, R. and Schilling, E. (1989). Effects of daily stress on negative mood. *Journal of Personality and Social Psychology*, 57(5), pp.808-818.
- Cann, A., & Collette, C., (2014). Sense of Humour, Stable Affect, and Psychological Well-Being: *Europe's Journal of Psychology:* 10(3), pp. 1841.
- Cohen, S., Kamarack, T., & Mermelstein, R., (1983). A Global Measure of Perceived Stress: *Journal of Health and Social Behaviour*: 24(4), pp. 385-296.
- Crawford, J., & Henry, J., (2004). The Positive and Negative Affect Schedule (PANAS): Construct validity, measurement properties and normative data in a large non-clinical sample: *British Journal of Clinical Psychology*: 43, pp. 245–265.
- Doosje, S., Landsheer, J., de Goede, M. and van Doornen, L. (2010). Humorous coping scales and their fit to a stress and coping framework. *Quality & Quantity*, 46(1), pp.267-279.
- Field, A. (2013). Discovering statistics using IBM SPSS. London: SAGE.
- Kazarian, S. and Martin, R. (2004). Humour styles, personality, and well-being among Lebanese university students. *European Journal of Personality*, 18(3), pp.209-219.
- Knight, W. and Rickard, N. (2001). Relaxing Music Prevents Stress-Induced Increases in Subjective Anxiety, Systolic Blood Pressure, and Heart Rate in Healthy Males and Females. *Journal of Music Therapy*, 38(4), pp.254-272.
- Kuiper, N., Martin, R. and Olinger, L. (1993). Coping humour, stress, and cognitive appraisals. *Canadian Journal of Behavioural Science/Revue canadienne des sciences du comportement*, 25(1), pp.81-96.
- Leist, A. and Müller, D. (2012). Humor Types Show Different Patterns of Self-Regulation, Self-Esteem, and Well-Being. *Journal of Happiness Studies*, 14(2), pp.551-569.
- Martin, R. and Lefcourt, H. (1983). Sense of humor as a moderator of the relation between stressors and moods. *Journal of Personality and Social Psychology*, 45(6), pp.1313-1324.
- Martin, R., Kuiper, N., Olinger, L. and Dance, K. (1993). Humor, coping with stress, self-concept, and psychological well-being. *Humor International Journal of Humor Research*, 6(1).

- Martin, R., Puhlik-Doris, P., Larsen, G., Gray, J. and Weir, K. (2003). Individual differences in uses of humor and their relation to psychological well-being: Development of the Humor Styles Questionnaire. *Journal of Research in Personality*, 37(1), pp.48-75.
- Martin, R. & Ford, T., (2018). The psychology of humor: an integrative approach: London: Academic Press.
- Newman, M. and Stone, A. (1996). Does humor moderate the effects of experimentally-induced stress? *Annals of Behavioral Medicine*, 18(2), pp.101-109.
- Salmons, P. and Harrington, R. (1984). Suicidal Ideation in University Students and Other Groups. *International Journal of Social Psychiatry*, 30(3), pp.201-205.
- Starcke, K., Wolf, O., Markowitsch, H. and Brand, M. (2008). Anticipatory stress influences decision making under explicit risk conditions. *Behavioral Neuroscience*, 122(6), pp.1352-1360.
- Watson, D., Clark, L. and Tellegen, A. (1988). Development and validation of brief measures of positive and negative affect: The PANAS scales. *Journal of Personality and Social Psychology*, 54(6), pp.1063-1070.