ENCOURAGEMENT OR DISTRACTION: THE EFFECT OF VERBAL ENCOURAGEMENT ON MOOD, ATTITUDE, AND MOTIVATION WITH A COLD PRESSOR TASK

An Undergraduate Research Scholars Thesis

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ABSTRACT

Encouragement or distraction: The effect of verbal encouragement on mood, attitude, and motivation with a cold pressor task

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Encouragement is a commonly used form of social support. Studies have shown that encouragement and other modes of social support can lower cortisol, increase pain tolerance and thresholds, and lower heart rate. However, encouragement has not been widely studied in the realm of psychological impact. This study was designed to explore the psychological benefits of encouragement during the experience of pain, specifically focusing on mood, attitude towards the experiment, and motivation. Verbal encouragement is compared to distraction because some have questioned whether the true function of verbal encouragement is distraction. A cold pressor task, placing ones hand in a bucket of ice water, is used to simulate a painful task. Participants are surveyed before and after the task and are split up into three conditions: Control, Encouragement, and Distraction. Results did not show a significant difference between conditions on mood, attitude towards the experiment, and motivation. However, an interesting result involving distress is questioned and further directions of study are proposed.

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SECTION I

INTRODUCTION

People use encouragement for many situations, including cheering a friend on during a marathon or giving positive words during a difficult time. It is used both intentionally and unintentionally. Humans are social beings that commonly support each other through various tasks and goals. Being one of the "most common ways though which individuals express support for one another," (Wong, 2015, p. 179) one would infer that encouragement would be highlighted amongst psychological study. Because it is widely implemented in many diverse social situations one should ask why it is used and how effective is it really. Research can answer these questions based on physiological reactions to pain and stressors, however, encouragement has not been exhaustively studied in the psychological field (Wong, 2015). I will begin with a brief description of what encouragement is, avenues in which it has been studied, and the relevance of it alongside another alternative subject: distraction.

Encouragement

Definition

In the past, encouragement as a construct has been defined in multiple ways by different groups. Nikelly and Dinkmeyer (1971) described it as a "non-verbal attitude that communicates esteem and worth to an individual" (Wong, 2015, p. 181). From this point it begins as a positive form of symbolic communication that conveys positivity from one to another. Some years later Dinkmeyer and Losoncy (1996) move on to exclude the limitation of non-verbal communication and includes the criteria of using a "persons' inner resources" to facilitate the conveyed positivity (Wong, 2015, p. 181). At this point we can see that the idea of encouragement has a foundation

of building another up in a positive manner. From these previous definitions and other studies Wong (2015) proposed a both broader and more exclusive definition to encouragement. Wong defines encouragement as "the expression of affirmation through language or other symbolic representations to instill courage, perseverance, confidence, inspiration, or hope in a person(s) within the context of addressing a challenging situation or realizing a potential" (2015, p. 182). Breaking it down, we can see that it broadens to include "language or other symbolic representations" which could mean verbal, non-verbal, and other modes of communication. However, the exclusivity strengthens as it narrows down to a specific context of a "challenging situation or realizing a potential." Encouragement, therefore, is a very specific form of communication used in a specific setting for a specific purpose. For the remainder of this paper, encouragement is defined by the description given by Wong.

Social Support and Avenues of Study

Social support is a much more common topic of interest in the field of psychology. Social support as defined by Cobb (1976) is "information leading the subject to believe that he is cared for and loved, esteemed, and a member of a network of mutual obligations" (Roberts, Klatzkin, & Mechlin, 2015, p. 557). This broad category includes encouragement as a form of social support. As a broader category, social support is studied more often. It is also described as a "coping resource" from which individuals "draw when dealing with stressors" (Thoits, 1995, p. 59).

Many have studied encouragement through the category of social support. These studies have mainly focused on health psychology and physiological outcomes. Indeed it has been found to be key in the promotion of health behaviors and has been studied specifically as a type of parental support (Wong, 2015). For example, a child's physical activity habits can be positively

influenced by parental encouragement (Wong, 2015). Also, encouragement from family members has been seen to positively influence a healthy diet (Sallis, Grossman, Pinski, Patterson, & Nader, 1987; Stephens, et al., 2010). On another side, we can also say that social support can achieve positive physiological outcomes as well (Egbert, Battit, Welch, & Bartlett, 1964; Roberts, Klatzkin, & Mechlin, 2015). Egbert, Battit, Welch, and Bartlett studied the effects of pre-operative information and coaching on postoperative pain and narcotic use (1964). Participants were all patients preparing for a surgical procedure. Post-procedure these operations would cause a certain amount of pain for the patient. Patients were randomly assigned to one of two groups. The control group was not informed of the post-operative pain that they would experience. The "special care" group was informed of the post-operative pain and also instructed on how to manage that pain. Egbert, Battit, Welch, and Bartlett (1964) noted that the presentation of this information was "in a manner of enthusiasm and confidence" (p. 825). While one may argue that this is a weak form of encouragement, it still falls into the definition given by Wong (2015). Results showed that those in the special care group used narcotics less post-operation and also subjectively rated lower on pain. Objective observers also rated the patients pain as less compared to those in the control group. This study shows that even a small amount of encouragement can play a role in reducing physiological pain and narcotic use post-operation. In a more controlled, laboratory study done on cold pressor pain it was shown that social support "attenuated cardiovascular and neuroendocrine reactivity; pain rating; and perceptions of task difficulty, tension, and effort" (Roberts, Klatzkin, & Mechlin, 2015). In this study, participants were asked to place their hand in a bucket of ice cold water and rate their pain every 20 seconds. Each participant was placed in one of three conditions: verbal social support, neutral non-support, or alone. In verbal social support and neutral non-support participants completed the

experiment with a female confederate present. The confederate in verbal social support would chime in during the cold pressor task with "scripted statements of verbal emotional support" such as "You're doing great! Remember you're not alone" (Roberts, Klatzkin, & Mechlin, 2015, p. 560) In Neutral non-support the confederates were instructed to read a magazine during the task. In the alone condition participants were only accompanied by the experimenter. The key to this study is that there are two forms of social support: verbal and non-verbal. The mere presence of another person can be seen as a form of non-verbal social support. The results found that those in the verbal-social support conditions benefitted physiologically while those in the alone and neutral non-support were not. This shows that the "mere presence of an individual was not sufficient" (Roberts, Klatzkin, & Mechlin, 2015, p. 564-565). Notably, in this study the authors also measure perceptions of the painful experience on the grounds of tension, difficulty, and effort. Results showed that these perceptions were positively influenced by verbal social support. This is a stepping-stone into the idea that social support, more specifically encouragement, not only benefits physiologically but psychologically as well.

In the discussion, the authors do mention an alternative interpretation to their results. They admit that the "possibility exists that the stress and pain reductions observed in social support condition may have been due to the distraction posed by the confederate's verbal comments" (Roberts, Klatzkin, & Mechlin, 2015, p. 566).

Distraction

Distraction can be defined as "the intentional deployment of attention away from pain or other distressing stimuli and towards pleasant or emotionally neutral stimuli" (Jaaniste, Hayes, & Baeyer, 2007, p. 2790). Distraction has been employed as a coping technique for painful situations in many studies (Jaaniste, Hayes, Baeyer, 2007; Jackson, 2007; McCaul & Haugtvedt,

1982; Salmon & Pereira, 2002). While results vary by study, a common theme across outcomes is that distraction increases pain tolerance. McCaul and Haugtvedt (1982) completed a particular study on attention versus distraction in response to cold pressor pain. Their study employed 4 different experiments geared to answer questions on whether attending to pain or distraction from it is a more effective coping device. Results concluded that distraction was a better coping device when responding to cold pressor pain for a shorter period of time and attention to sensations was better for longer lengths of time. This suggests that there are nuances to the effectiveness of coping devices and that one is not good for all situations. While distraction is superior for some situations it may not be the best for all situations, and the same can be said for other coping devices, such as encouragement.

As mentioned above, distraction may play a role in verbal encouragement when being used as a coping device. Having one person talk to another may not just encourage but draw attention away from the task at hand. Due to the questions of similar functionality between verbal encouragement and distraction, one must ask if there is a significant difference between the two. If there is a difference, it is important to know what the difference is and when one might be beneficial over the other.

Current Study

The research discussed in this paper is geared towards the answers to these questions. It is a preliminary study designed to explore the psychological benefits of encouragement and if there is a significant difference between encouragement and distraction. The main question is what are the effects of encouragement and distraction on mood, attitudes towards the experiment, and motivation. Many studies mentioned above have already proved the efficacy of encouragement and distraction for physiological improvements during painful or difficult tasks. This study aims

to ascertain if there are major effects psychologically, not physiologically. The assumption is that the main differences between distraction and verbal encouragement are content, tone, and facial expression. Distraction is not intended to positively influence the person it is directed to. It is for the purpose of drawing attention away. Encouragement is for the direct purpose of positively influencing the one being encouraged.

The study will explore a few hypotheses. Hypothesis one is that those in the Encouragement condition will have an increase in positive mood as compared to Distraction and Control conditions. Hypothesis two is that those in the Encouragement condition will rate higher in positive attitude towards the task as compared to those in the Distraction or Control conditions. Finally, the last hypothesis predicts that those in the Encouragement condition will have an increase in motivation and be more motivated during the cold pressor as compared to the Distraction and Control conditions.

SECTION II

STUDY

The study was run at Texas A&M University in a Social Psychology research suite.

Participants

Participants were 48 undergraduate students enrolled in an introductory psychology course. A total of 14 men and 34 women participated. The majority of participants were White (68.8%) with the next highest ethnicity being Hispanic/Latino (25%). Age ranged from 18 to 24 with the majority of participants being 18 years of age (56.3%).

Method

Consent and Pre-Task Survey

Participants were randomly assigned to the Control, Distraction, or Encouragement conditions upon arrival. Participants answered a brief survey, on a computer, that recorded descriptive characteristics (gender, age, and ethnicity), mood (happiness, pleasantness, and distress), motivation, and the Ten-Item Personality Inventory (TIPI). All surveys were given using the online survey platform Qualtrics. After finishing the survey, the experimenter brought a bucket filled with ice water that measured between 0 and 2 degrees Celsius. Following a script, the experimenter instructed the participant to place his or her non-dominant hand into the bucket until his or her hand was submerged up to the wrist. All participants were informed that their hands would be submerged for two minutes, unless they needed to remove their hand due to severe feelings of pain. At this point the protocol deviated depending on condition.

Control

During the ice water task (cold pressor), participants in the Control condition where left alone for the full two minutes or until they removed their hand. The experimenter stood away from the participant and refrained from engaging in conversation that might cause any form of distraction. Experimenters only answered direct questions asked by the participant.

Distraction

Participants in the Distraction condition where approached by the experimenter every 15 seconds. As the experimenter approached the participant, a scripted line about an aspect of the room was stated. The script was written as if the experimenter was approaching the participant, checking on him, and making a random observation about the room that the experimenter had not noticed before. Experimenters were instructed to make the script feel as natural as possible. Participants were not made aware that experimenters were speaking scripted lines. The purpose of this was to simulate a realistic situation involving verbal distraction unassociated with the task.

Encouragement

The Encouragement condition was modeled after the Distraction condition. Similar to the Distraction condition, the experimenter approached the participant every 15 seconds, checked on her, and made a comment. The difference between Distraction and Encouragement conditions is the content of the script. The Encouragement condition consisted of encouraging statements made towards the participant as they completed the cold pressor. These lines were made to feel natural and unscripted, as above. When the participant completed the task or removed his hand the experimenter told him “good job!”

Consent and Post-Task Survey

After each condition was completed, participants were given a towel and instructed to complete a closing survey. The closing survey included two pain scales (Wong-Baker Faces and Likert), post-task mood (happiness, pleasantness, and distress), motivation, attitude towards the experiment and various social support preference questions. Upon completion, participants were debriefed and given class credit for participating in this research experiment.

Outcome Measures

Mood was measured by asking participants by self-report how happy, pleasant, and distressed they currently felt. Each mood was presented on a 7-point scale from 1 (not at all) to 7 (very).

Motivation was measured by asking participants to self-report how motivated they felt pre- and post-task. Task motivation was measured by asking participants how motivated they felt during the cold pressor task. All were on a 7-point scale from 1 (not at all) to 7 (very).

Attitude was measured by asking participants to rate how positive they thought the experiment was on a scale from 1 (not at all) to 7 (very). Participants were also asked to rate how much they agreed with the following statements on a scale form 1 (strongly disagree) to 7 (strongly agree):

"Overall, I am happy I did this experiment."

"I would do another experiment like this."

Pain measures were included to ensure that all participants experienced pain. This was necessary in order to reach the full definition of encouragement of being used in "challenging situations" (Wong, 2015).

SECTION III

RESULTS

Mood

An Analysis of Variance (ANOVA) run on happiness revealed that there was no significant difference between conditions in the change in happiness from pre- to post-task ($F(2, 45)= 1.126$, $p= .333$). The means indicate that, on average, most participants' happiness went down slightly.

There was no significant difference between conditions in pre- to post-task changes in pleasantness ($F(2, 45)= .078$, $p= .925$). Similar to happiness, means indicate that pleasantness went down.

Distress change from pre- to post-task did not significantly differ between conditions ($F(2, 45)= 1.28$, $p= .288$). One difference between distress and the other two mood measures was the indication that distress went slightly up in the Encouragement condition while going down in Control and Distraction conditions (Figure 1).

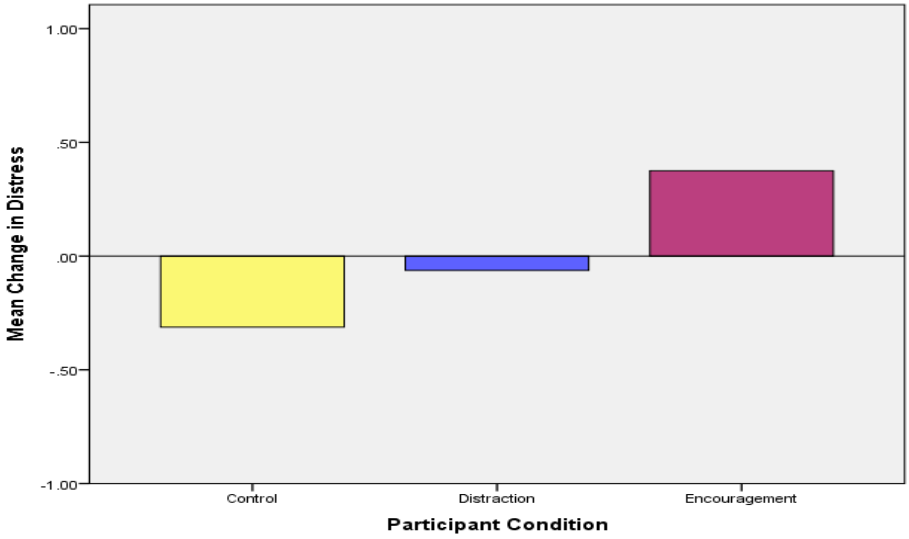

Figure 1: Change in Distress from Pre-task to Post-task

Attitude

An ANOVA reported no significant difference between groups in how positively the task was rated ($F(2, 45)= .634$, $p= .535$).

No significant difference between conditions was found when participants responded to "Overall, I am happy I did this experiment" ($F(2, 45)= .288$, $p= .751$).

When responding to "I would do another experiment like this," there was no significant difference between conditions ($F(2, 45)= 1.36$, $p= .267$). A post-hoc (Bonferroni) showed that the difference between Distraction and Encouragement reached p= .337. While not significant, it displayed that those in the Encouragement condition agreed slightly more with the statement than those in the Distraction condition (Figure 2).

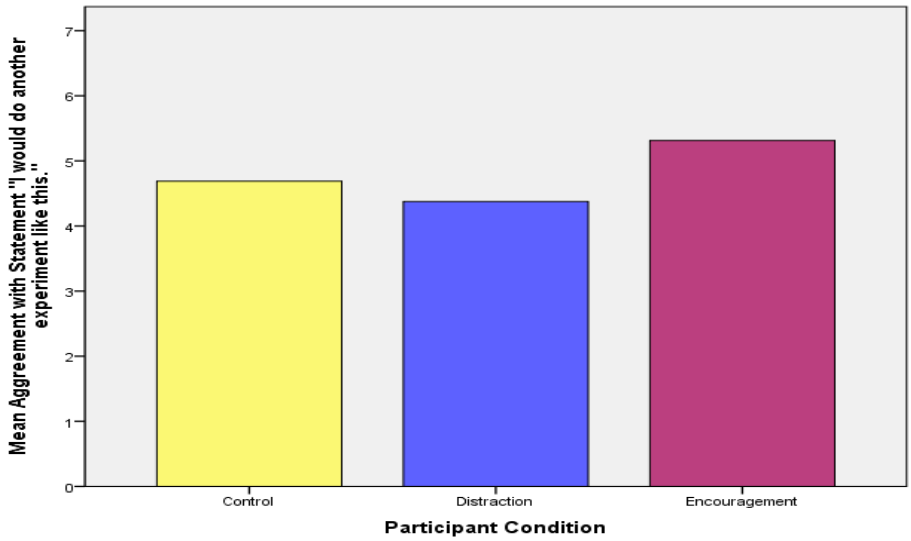

Figure 2: Participant Agreement with "I would do another experiment like this."

Motivation

An ANOVA was run on the change in motivation from pre- to post-task. There was no significant difference in change of motivation between the conditions ($F= (2, 45)= .113$, $p= .894$). An ANOVA run on task motivation also revealed no significant difference between

conditions ($F(2, 45)= .606$, $p= .550$). While the difference was not significant, it was noted that those in the Encouragement condition rated slightly higher in task motivation compared to the Control and Distraction conditions (Figure 3).

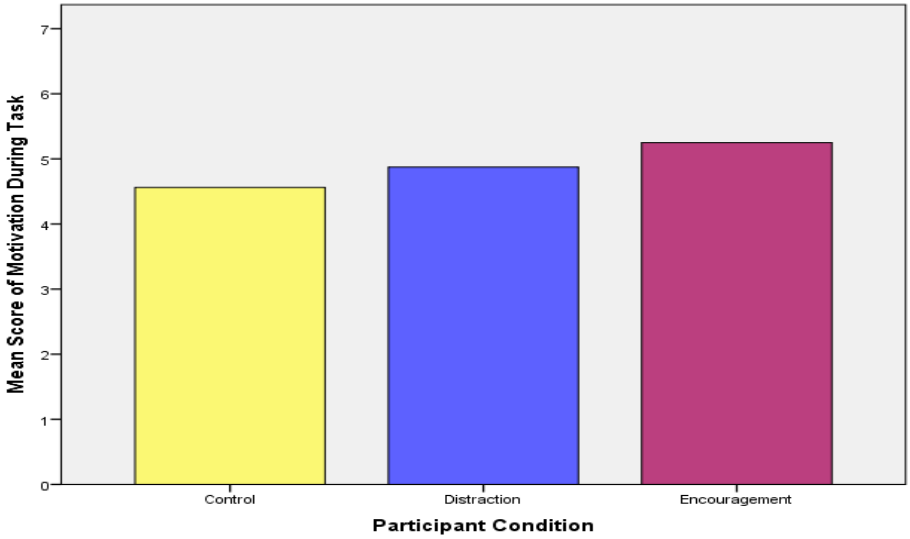

Figure 3: Participant Motivation Felt During the Task.

SECTION IV

DISCUSSION

The purpose of this experiment was to determine if there was a significant effect of verbal encouragement on mood, attitude, and motivation after one went through a cold pressor task and if it differed from distraction. Insignificant analysis does not automatically mean the findings were unimportant. While none of the results were significant there are important things to learn and future directions that can be taken.

Limitations and Patterns

Limitations need to be considered when dealing with insignificant results. One limitation considered in this study was the amount of participants studied. A total of 48 participants is a relatively low sample size. However, looking at effect size can tell one whether the manipulations made an effect on the population regardless of its size. Bigger effect sizes mean a bigger impact overall. In this study, all the effect sizes were significantly small (> 0.1). This means that the manipulations did not make a significant effect of the participants and the insignificance was not caused by a lack of variability due to sample size.

From the lack of large effect sizes, it can be considered that the manipulations were not robust enough to make a significant effect on the participants. This could mean that, in order for Encouragement and Distraction to make a large impact, they need to be rigorous. In this study, participants were encouraged and distracted every 15 seconds while their hands were in ice water. It should be considered that for this task it may be necessary for participants to be constantly distracted or encouraged for a large effect to be observed. If this is not the case, then

perhaps encouragement and distraction do not make large psychological impacts on people when going through short periods of physical pain like a cold pressor task.

It can be said that from the results, while there was no significant difference, there was some difference between Encouragement and Distraction conditions. The most notable of these was the occurrence of an increase in distress in the Encouragement condition. This difference could mean that the two conditions are indeed different and encouragement may not be functionally identical to distraction, as some have questioned (Roberts, Klatzkin, & Mechlin, 2015).

The pattern of results also raises some interesting questions. While distress slightly increased in the Encouragement condition, motivation during the task still remained the highest in this condition compared to the others. Participants in the Encouragement condition also rated the highest when responding to "I would do another experiment like this." The question next is "why?" Why did motivation and attitude towards the experiment remain relatively high while distress increased? Would a decrease in distress lead to a different pattern? Would this same pattern repeat with more study?

Future Directions

There are future directions that can be taken with these results. Another study could be run with more robust manipulations. A study like this could determine if encouragement and distraction need to be rigorous to produce large effects. Other studies could question the outcome of distress change and if that outcome played a role in other measures. Along this avenue, researchers could ask if the patterns of results presented in this experiment replicate.

As mentioned, non-significance does not automatically mean an experiment didn't succeed. Meaningful information can still be gleaned from any outcome. If anything, a lack of

significance can tell a researcher what may not have worked or what not to do. This information is useful when determining what directions to go in the future. In this case it can be seen that distraction and encouragement may very well be different functionally, the manipulations used did not cause significant effects, and encouragement could be causing an interesting pattern with distress, motivation, and attitude. If these observations are followed and expanded upon with further research, the scientific community can better understand the psychological functions of encouragement and even when it is best used.

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