

Flow from Pain: Chronic Pain Management through Flow Induction

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Introduction

According to the National Center (NCHS), 20.4% of people living in the United States report living with daily chronic pain while 7.4% of those people reporting symptoms that limit their quality of life and ability to work. Pain is the result of complex pathways in the nervous system that often happens within a fraction of a second (Russo and Brose, 1998). Chronic pain is the lasting and consistent pain that results from areas of the body becoming oversensitive to the pain (Cervero, 2012). In America, the primary method of treating chronic pain comes from use of pharmaceuticals designed to target areas of pain or to alter the brains perception of pain. The problem with this is that America is well-known for problems with medication being addictive, which has historically led to societal problems that we still have not gotten over. During the 1990s, the oxycodone problem that plagued the nation is just one example of the dangers of modern medicine despite the overall success in pain management (Van Zee, 2009). The purpose of this research is to investigate new methods of pain management by using flow state: a mental state that reduces participants awareness of time, as well as internal and external stimuli by capturing their attention in a dynamic, creative manner that allows for optimized productivity and performance (Nakamura and Csikszentmihalyi, 2014). While chronic pain has not had the same bountiful research as other areas of pain mitigation, flow state itself is not a new concept. Most task we do every day illicit some manner, such as exercise, art, reading-- the proper use and direction of this flow has shown result in mood improvement, self-esteem, and enjoyment of activities (Thin et al., 2011). With what we know about the dynamic of flow state, is it possible to establish correlation between flow and states of healing? This research aims to better understand the effect of flow on participants who experience daily chronic pain. The goal is to determine whether flow can help build a level of resiliency that then mitigates the overall effect of pain.

Empirical Question

Does the introduction of flow, and development of resiliency reduce levels of pain as perceived by individuals who live with chronic pain?

Proposed Method

The materials for this study included a standard demographic measure as well as the following published, cited measures:

Participants

A priori power analysis of a one-tailed correlation using G*Power® software yielded a projected sample size of 116 participants (68 females, 48 males), for a power coefficient of 0.95. Convenience sampling will occur on the Pacific University campus from among both the undergraduate and graduate populations, using email solicitation, list serves, fliers, and word-of-mouth. We anticipate the average age of the sample will be 25 years, with a greater proportion of females to males given Pacific University has a ratio of 58% females to 42% (Pacific University Office of Institutional Research, 2016).

Becks Anxiety Inventory assesses levels of anxiety using a 21 itemed, 4-point Likert-like. (Beck, et al., 1998).

Beck's Depression Inventory assesses levels of depression on a 21 itemed, four-point Likert scale (Beck et al., 1996).

Mc Gill Pain Questionnaire (MPQ) measures levels of perceived pain by measurement of coded words participants choose throughout four main categories and 20 subcategories (Melzack, 1975).

Flow State Scale contains 36 items on a five-point Likert scale to provide a score that measures flow state experience. (Jackson and Marsh, 1996).

Conner Davidson Resiliency Scale (CD-RISC) assesses scores of degrees of resiliency using 25, five -point Likert agreement scales for a total sum (Connor and Davidson, 2003).

This experiment will use a pre-test post-test, control group design in which participants will be randomly assigned to either of two experimental groups: creative activity (painting) or physical activity (yin yoga), or the control group (watching a pre-selected educational documentary meant to not stimulate flow). The experimental group will engage in an instructor-led painting session to attempt a flow state. The control group will engage in watching a documentary about farmland machinery with the intent to be interesting enough to not induce drowsiness but not enough interest to induce a flow state. Before participants are randomly assigned to the control or the flow conditions, they will take the MPQ to get a reference value for their pain type and intensity, and the CD-RISC to get a comparative score of their resilience. Participants will then spend 2 hours engaging in their respective activity. At the conclusion of their condition, participants will complete the MPQ again to measure changes in pain type and intensity. The Flow State Scale will then be administered to measure if the activity approximated a flow state and if so, to what degree. Every Participant will be given an informed consent and then one group will complete the self-report assessments and demographics. Participants will receive a written debriefing form at which time any further questions will be answered. From the demographic survey data, sampling frames will develop based on certain criteria categories from the survey. Appropriate statistical analyses will be completed using SPSS®.

Proposed Results

The results will be interpreted using a series of analysis of variance (ANOVA) to determine significant differences between the three controlled groups. Pearson's r for all continuous data: ASRS, ARHQ, CISS, visual acuity, Alpha Omega, and near point of convergence scores. Internal consistency will be assessed on the demographics survey, Beck's Anxiety/Depression Inventory, Flow State Scale, Conner Davidson Resiliency scale using Cronbach's Alpha.

Conclusion

We anticipate that participants who experience chronic pain regularly and score high in measure of resiliency will also report the most pain reduction following flow state-controlled activity. The purpose of this experiment is to demonstrate the likelihood of flow state mitigating the feeling of pain in participants and will promote healthier healing and reduction of symptoms.

Select References

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