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# The Effects of Exercise on Stress

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## Background

- Research has found that stress has the ability to affect the way a person may sleep, eat, and the possible development of certain diseases.
  - Mullan B. A. (2014) found a major correlation between poor sleep and stress, which often had a negative effect on individual's overall health
- Penedo, F. J. & Dahn, J. R. (2005) found that exercise showed a positive correlation with overall health, both physically and mentally.
- Chin, X, Et al (2013) found that participants who were exposed to a “scary” sound clip were more likely to experience “excited” and “unpleasant” emotions, while those who were exposed only to music experiences “pleasant” and “calm” emotions.
  - This shows that music has the ability to change a persons current state of being
- Our study will seek to find the relationship between a physical stressor (sound) and exercise, along with its affects on an individuals physical (blood pressure) and their emotional health (PANAS (S)).
- We hypothesized that the participants who experience the stressful situation and exercise will have significantly lower blood pressure than those who experience a stressful situation and do not exercise.

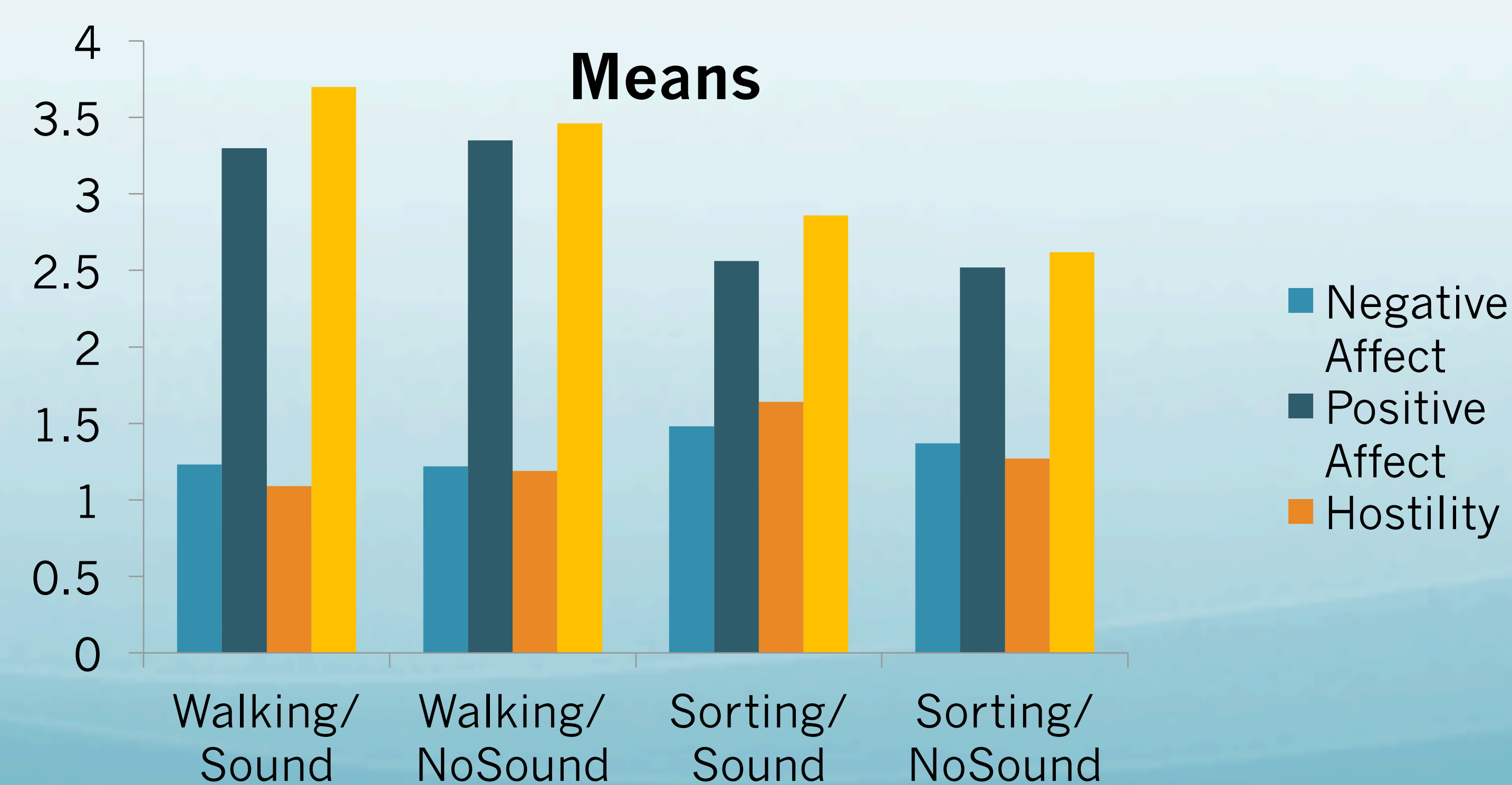
## Method

- Our participants consisted of 16 male and 23 female undergraduates from a small private Christian university in southern Arkansas.
- Subjects began by taking a 10-question logic based test. They were then randomly assigned into groups that either had the background noise of a soothing song, or the same song with a noise stressor.

- Participants then engaged in speed walking or a sorting activity based on the groups they were assigned to.
- After completing the test and activity assigned, the participants filled out a PANAS (S) survey and then had their blood pressure taken.

## Results

- Results show that the speed walking exercise did not reduce the stress level of the participants.
- However, serenity and positive affect had a significant correlation with exercise. Whereas hostility and negative affect did not have a significant correlation, they were still reduced due to the walking exercise.
  - Serenity-  $F(1,39)=8.32$ ,  $SD=0.97$ ,  $p=.007$ .
  - Positive-  $F(1,39)=11.26$ ,  $SD=0.79$ ,  $p=.002$ .
  - Hostility-  $F(1,39)=4.07$ ,  $SD=0.49$ ,  $p=.051$ .
  - Negative-  $F(1,39)=1.92$ ,  $SD=0.42$ ,  $p=.18$ .
- By looking at the means of hostility, serenity, positive affect and negative affect, it shows that the speed walking activity relieved the participants.



## Conclusions

- After looking at the results, we found that our hypothesis was incorrect. There was minimal difference in the blood pressure when comparing participants who walked to participants who sorted. However, the PANAS(S) survey showed that participants had a more positive attitude, higher serenity levels, lower hostility levels, and a less negative attitude when participating in the speed walking activity.
- Our results indicated that rather than the music stressing out our participants, it was the 10-question logic based test.
- Our results show that this topic needs to continue to be studied further as exercise continues to gain popularity, and may have the ability to positively affect stress and other major diseases like anxiety and depression.

## References

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