INTRODUCTION

- Regular physical activity is known to decrease risk of cardiovascular disease, diabetes, obesity, anxiety, and depression, among other issues (Haskell et al., 2007; Pate et al., 1995).
- Physical inactivity is a rampant problem worldwide, with approximately two-thirds of the adult population not meeting minimum recommendations for physical activity (Cavill, Kahlmeter, & Racopiti, 2006) and 68% of American adults classified as overweight or obese (Ogden, Carroll, Kit, & Flegal, 2014).
- Exercise, or lack thereof, has become an increasingly larger concern in regard to the college student population, where rates of exercise have been found to decline and weight gain is also observed (Lox, Martin Gims, & Petruzzello, 2014).
- There are a number of factors that influence exercise participation, with some of those factors being affect, a measure of well-being.
- Research on affect has found that affect increases following an exercise session, however, some recent studies have also found that when measured during exercise, affect tends to be lower (Lox et al., 2014). In other words, while exercise may make people feel better afterwards, if people are not enjoying themselves during the workout itself, this could explain why some individuals do not enjoy exercise.
- There are few studies to date that have examined affect during exercise, so more research in this area is necessary.
- The relationship between affect during exercise between active and inactive college students will advance the research in this area, and could also lead to the improved design of exercise interventions and strategies to increase physical activity in college students.

PURPOSE

The purpose of this study was to explore the differences in affect during exercise between active and inactive college students. The following research questions guided this study:

- Does affect during moderate-intensity exercise differ between active and inactive college students?
- Does affect during moderate-intensity exercise differ between males and females?
- Is there a relationship between level of affect during moderate-intensity exercise and future exercise intention?

METHODS

Participants: All participants provided informed consent prior to testing. A total of 72 participants (N=72) were recruited from Texas A&M University-Kingsville, where nactive=41, ninactive=31, and nfemale=38, nmale=34.

Instrumentation:
- Positive and Negative Affect Survey (PANAS, Watson, Clark, & Tellegen, 1988) [Figure 1]
- Heart Rate Monitor (Polar FT1)
- Cycle Ergometer (Lode Corval)
- Exercise Intention Index (modified from Budden & Sagarin, 2007; Helfer, Elahi, & Geers, 2015) [Figure 2]

Procedures:
- Pre-participation screening:
- Informational and Health History Questionnaire, Exercise Participation Survey
- PANAS explanation
- 30 min cycling bout at moderate intensity (60-75% HRMAX)
- PANAS administered at 28 min mark of exercise
- Exercise Intention Index administered post-exercise

Statistical Analysis: Differences between male/female and active/inactive for affect and exercise intention were analyzed using Mann-Whitney U tests. Spearman rank order correlation was used to assess relationship between level of affect and exercise intention, p<0.05 for all tests.

RESULTS

Table 1: Gender and Affect

<table>
<thead>
<tr>
<th>Gender</th>
<th>Positive Affect Score</th>
<th>Negative Affect Score</th>
<th>Exercise Intention Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>n</td>
<td>Median</td>
<td>Mean ± SD</td>
<td>Median</td>
</tr>
<tr>
<td>Male</td>
<td>41</td>
<td>34±9</td>
<td>14±14</td>
</tr>
<tr>
<td>Female</td>
<td>28</td>
<td>29±9</td>
<td>11±14</td>
</tr>
</tbody>
</table>

No significant differences were found for positive affect, negative affect, or exercise intention (p>0.05).

Table 2: Activity Level and Affect

<table>
<thead>
<tr>
<th>Gender</th>
<th>Positive Affect Score</th>
<th>Negative Affect Score</th>
<th>Exercise Intention Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>n</td>
<td>Median</td>
<td>Mean ± SD</td>
<td>Median</td>
</tr>
<tr>
<td>Active</td>
<td>33</td>
<td>33±2</td>
<td>13±13</td>
</tr>
<tr>
<td>Inactive</td>
<td>38</td>
<td>32±8</td>
<td>13±13</td>
</tr>
</tbody>
</table>

No significant differences between activity levels was seen for positive affect, negative affect, or exercise intention (p>0.05).

Table 3: Positive and Negative Affect Correlation

<table>
<thead>
<tr>
<th>Gender</th>
<th>Positive Affect</th>
<th>Negative Affect</th>
</tr>
</thead>
<tbody>
<tr>
<td>Positive Affect</td>
<td>r = 0.99</td>
<td>0.008</td>
</tr>
<tr>
<td>Negative Affect</td>
<td>r = 0.89</td>
<td>0.058</td>
</tr>
</tbody>
</table>

No significant relationship was detected between either positive or negative affect, and exercise intention (p>0.05).

CONCLUSIONS

- No significant differences were found between active and inactive individuals on affect scores. This contradicts what previous research (e.g., Ekkekakis, 2009) proposed, that active individuals would feel more positively and less negatively than those who are inactive during a short bout of exercise.
- Meaning, that the deterrent of exercise participation in our sample is not what was previously thought to be affect during exercise.
- A significant difference was found between males and females for positive affect. Males experienced higher levels of positive affect than women during the exercise bout. This could mean males enjoyed the exercise more than females. A study by Arzovko et al. (2007), found that 47.9% of males reported participating in exercise for enjoyment reasons, while only 24.6% of women indicated this.
- Potential limitations to this study include: social desirability, mode of exercise selected, and the use of the PANAS to measure affect.
- Social desirability is the tendency for individuals to provide responses mirroring socially desirable traits rather than the latter (Zerbe & Paulhus, 1987). This may have occurred with the PANAS administered verbally.
- Another potential limitation could be the mode of exercise used for the study. For example, some participants may have preferred a treadmill to the cycle ergometer, therefore, making the exercise bout less enjoyable. Furthermore, removing the feedback from participants to select their own choices, such as exercise mode or intensity, can impact affect (Ekkekakis, Lind, & Vazou, 2010).
- Finally, while the PANAS has been found to have both high internal consistency and validity (Watson et al., 1988), it is not exercise-specific measure. However, it has been used in previous studies (Bisby, Spalding, & Hatfield, 2001), and measurement issues also exist with the instruments developed for the exercise population. Thus, the PANAS was deemed appropriate for this study.
- Future research should be conducted over a longer period, to the fitness professional, as similar interventions and training may generate similar results for both inactive and active populations. Additionally, given the gender discrepancies found for positive affect, practitioners may need to consider using different training techniques or interventions for males and females.

REFERENCES