
472 Board #288 May 27 10:30 AM - 12:00 PM
Can You Dig It: The Acute Psychological Responses To Volleyball Participation
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(No relationships reported)

Exercise is one of the most beneficial daily habits to increase overall health and wellness. However, failure to enjoy exercise programs has often been cited as a primary reason to cease/not engage in said programs. Among adults, participation in recreational sporting activities is often overlooked as a potentially more enjoyable mode of exercise.

PURPOSE: Explore the acute effects of recreational sports on affective states.

METHODS: Participants [$N=24$, 18 males; age ($M \pm SD$); 29.0 ± 6.8 yrs; BMI ($M \pm SD$); 24.0 ± 4.1] completed three games of recreational volleyball over a one hour duration. Affective states (Activation-Deactivation Checklist: AD ACL) and state anxiety (SAI) were assessed before (pre), immediately (post0) and ten minutes (post10) after activity. Data was analyzed using SPSS 24.0.0, utilizing repeated measures analysis of differences for main outcome measures.

RESULTS: Participants reported a significant increase in Energy ($M_{diff} \pm SE$); 4.4 ± 0.75 [Cohen's $d = 1.34$] and Tension ($M_{diff} \pm SE$); 2.3 ± 0.57 [Cohen's $d = 1.06$], while reporting a significant decrease in Tiredness ($M_{diff} \pm SE$); 3.0 ± 0.83 [Cohen's $d = 0.88$] and Calmness ($M_{diff} \pm SE$); 4.0 ± 0.62 [Cohen's $d = 1.49$] from pre to post0. However, affective states were not different at post10 relative to pre (all p 's ≥ 0.5). While SAI significantly decreased from post0 to post10 ($M_{diff} \pm SE$); 3.2 ± 0.74 [Cohen's $d = 0.90$], it was not different at post10 relative to pre ($p=0.52$).

CONCLUSION: While participants experienced significant increases in Energy and Tension, while showing decreases in Tiredness and Calmness consistent to previous literature immediately post exercise, none of these improved affective states were expressed at post10. Additionally, no significant changes in state anxiety were observed 10 minutes post exercise. It is possible that the psychological effects of sport related physical activity differ from more traditional cardiovascular exercise effects. Future work on the psychological responses to recreational activities is needed to further explore these phenomenon.

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Relationship Between Sleep Parameters, Perceived Recovery And Aerobic Performance In Runners
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Sleep is considered fundamental for the physical recovery process, being related to the compensation process due to the residual effect of training. In addition, sleep seems to be related to performance in cognitive activities. However, little is known about the relationship of sleep to performance and recovery in long-distance runners.

PURPOSE: To verify the relationship between sleep parameters, perceived recovery and aerobic performance of runners.

METHODS: Eight long-distance runners (age, 30.3 ± 5.5 years; maximum oxygen consumption, 59.4 ± 3.4 ml.kg.min⁻¹), classified as good sleepers (Pittsburgh Index Quality <5), had their sleep monitored for six days a priori from a race to exhaustion. Pulse actigraph was used for 15 days to verify sleep parameters (total sleep time, sleep efficiency, number of awakenings and sleep latency). Perceived recovery was assessed by the Total Recovery Quality Scale (TQR) prior to the running session. The run-to-exhaustion session was performed at the anaerobic threshold, determined by the ventilatory equivalent, and presented as the time limit until exhaustion (tLIM).

RESULTS: Runners had a sleep efficiency of $87.4 \pm 9.6\%$, total sleep time of 350.4 ± 55.9 min (minutes), number of awakenings of 33.8 ± 25.5 min, sleep latency 13.8 ± 18.1 min on the night before the race and on the day of running run, the tLIM was 46 ± 15.3 min. There was a significant association between TQR and number of awakenings ($r = 0.928$; $p = 0.001$) and between TQR and sleep efficiency ($r = -0.844$; $p = 0.008$). In addition, tLIM was associated with sleep efficiency ($r = -0.817$; $p = 0.012$), WASO ($r = 0.773$; $p = 0.021$) and TQR ($r = 0.736$; $p = 0.019$).

CONCLUSION: These results indicate who running time to anaerobic threshold exhaustion and perceived recovery are associated with sleep parameters of the night before the race.

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Is Karate Training Effective In Improving Social Skills And Executive Functions In Children With Autism?
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Limited research exists exploring recreational activities (e.g. sport) as an integrative approach to therapy to bring benefits in social skills and executive functions.

PURPOSE: This study examined the effects of 12-week traditional Shotokan Karate training on social-emotional skills and executive functioning of children (8-11 years) with diagnosed autism spectrum disorder.

METHODS: Twenty-eight children were matched into pairs based on age, gender, and autism severity, and randomly allocated into an intervention ($n = 14$) or waitlist control group ($n = 14$). The intervention group performed Kata techniques training two times per week (45 min). The intervention included typically-developing children that helped facilitate the social skills, and activities targeted to train specific domains of executive functions, namely behavioral inhibition, working memory, and cognitive flexibility. At baseline and after 12 weeks, parents assessed social skills and executive functioning respectively through the Social Skills Improvement System Rating Scale and Behaviour Rating Inventory of Executive Function.

RESULTS: Findings suggest that intervention group showed significantly greater socio-emotional skills ($\Delta 8.9 \pm 3.1$, $p < 0.001$, $d = 2.85$) and lesser behavioral problems ($\Delta -8.0 \pm 3.1$, $p < 0.001$, $d = 2.64$) than the control group, and decreased the behavioral ($\Delta -3.6 \pm 2.7$, $p < 0.001$, $d = 1.36$), emotion ($\Delta -3.5 \pm 2.1$, $p < 0.001$, $d = 1.63$) and cognitive ($\Delta -2.3 \pm 1.5$, $p < 0.001$, $d = 1.54$) regulation indexes, and the Global Executive Functioning Composite ($\Delta -3.2 \pm 3.3$, $p = 0.003$, $d = 0.97$).

CONCLUSION: After 12 weeks, children with ASD showed a greater socio-emotional competence such as communication, cooperation and engagement, a better executive functioning ability such as cognitive flexibility, inhibitory control and working memory and a lower aggressiveness, sadness, anxiety and hyperactivity. Since ASD is a broad economic and societal problem that affects individual, family, and community levels.

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Goal Orientation And Beliefs About Success In Age Group Swimmers
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(No relationships reported)

Determining a swimmer's goal orientation and what they believe makes them successful can help coaches create better workouts and outcome measures in young athletes.

PURPOSE: Goal orientation (task vs ego) and success beliefs (effort, deception, ability and external factors) were examined in age group swimmers to determine if achievement theory differed by age.

METHODS: Eighty ($N=80$), 11-18 year old USA Swimming club members, completed the Task and Ego Orientation in Sport Questionnaire (TEOSQ) and the Beliefs About the Causes of Sport Success Questionnaire (BACSSQ). Parent consent and child assent was obtained. Regression and multivariate analyses were used to examine differences between age groups.

RESULTS: Athletes with Ego orientation had significant positive relationships with ability and deception as beliefs about the causes of sport success (Wilks' $\Lambda = 0.010$, $F(6, 69) = 1.195$, $p < 0.001$ and $p < 0.05$ for age categories, subsequent post hoc tests reached $p < 0.05$ for significance). Those with Task orientation had a positive relationship with higher effort and negative

relationship with deception as a belief about the cause of sport success. Age comparisons showed 13-14 and 15-18 year old age groups had significantly higher ego orientation than the 11-12 age group, the 15-18 age group having a significantly lower task orientation than both the 11-12 and 13-14 age groups. The 13-14 age group attributed deception to success in swimming significantly more than the 11-12 age group.

CONCLUSION: Older swimmers develop a higher ego orientation and lower task orientation due to more visible differences in ability and an increased focus on performance.

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Ironic Process Theory In Softball Pitching: How Knowing Information About An Opponent's Strengths Affects Performance

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(No relationships reported)

INTRODUCTION: As athletic competition and college athletics continue to grow and flourish, there is an increased emphasis on game preparation. Collegiate softball pitchers are expected to handle an immense amount of pressure, perform with precision, and incur few errors.

PURPOSE: Examine the Ironic Process Theory related to fast pitch softball pitching and to determine how knowing information about an opponent's strengths affects experienced pitcher's performance under pressure.

METHODS: Experienced college softball pitchers ($n = 12$) were recruited as subjects. Each pitcher was randomly instructed through two 30 pitch phases (a high and low pressure phase) with two different conditions: black target only condition (BOTC) or black and red target condition (BRTC). Subjects were asked to aim and hit the black target and avoid the red target. The black target represented the weakness of the opponent and the red target represented the strength of the opponent. Performance pressure was measured before each phase using the Mental Readiness Form (MRF-3) (Krane, 1994).

RESULTS: Pre-MRF-3 reached statistical significance across the between-subjects factor of pressure, [$t(22) = 3.102, p = 0.005$] with a mean difference of 4.75 (95% C.I. 1.57 to 7.92) indicating that the pressure situation induced an increase in perceived anxiety and stress. ANCOVA did not reach statistical significance on the main effects of black targets hit nor the interactions terms for black targets hit by MRF-3 and black targets hit by Pressure. This finding asserts that there was no difference in performance between BRTC and BOTC across pressure after adjusting for perceived anxiety. There was no statistically significant difference of red target hit between the high pressure and low pressure situations, $d = 0.25$ (95% C.I. -0.463 to 0.963), $t(22) = 0.723, p = 0.963$. **DISCUSSION:** Practically speaking, the pitchers in this study did perform more effectively in the high pressure situation. Although different from previous Ironic Theory research, it is important to note this increased ability for pitchers to hit a desired target while under pressure. Even if not statistically significant, this can help pitchers and coaches understand the link between pressure and performance more effectively, and add training components to improve in stress situations.

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The Effect Of Random And Blocked Practice In Volleyball Attack Learning

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Several practice methods have been used by coaches in order to improve athletes' performance through the permanent changes in movement performance. Two of the widely used practice tasks are blocked and random schedule. In random schedule, the practice target is unpredictable for the athletes. On the other hand, in blocked practice, the athlete executes the same motor movement repeatedly before moving to the next skill.

PURPOSE: The purpose of the present study was to examine the effect of contextual interference (random, blocked practice) on improving the volleyball attack (spike).

METHODS: Thirty six (36) amateur volleyball players ranging in age from 18 to 25 years old volunteered to participate in the study. The participants were randomly assigned into three experimental conditions: (a) random practice, (b) blocked practice, and (c) control group. The intervention program lasted 6 weeks, and each participant underwent two 90 minute training sessions per week. During the training, each participant performed a total of 40 blows per training session. Three measures were applied: The first measure (pre-test) performed just before the commencement of the intervention program, one immediately after its end (post-test), and the third measure a week after the program completion (follow-up).

RESULTS: The results indicated a significant improvement in the random schedule experimental group in the post-test compared to the pre-test ($p < .001$) as well as in the follow-up measure ($p < .01$). The blocked schedule group showed also an improvement in the post-test and follow-up measure compared to the pre-test ($p < .05, p < .05$). Additionally, the random group was significant better than blocked and control group in the post-test ($p < .01, p < .05$).

CONCLUSIONS: Practice schedule differentiates the improvement of skill acquisition, indicating that the random practice participants revealed higher improvement and retention of the performed activity.

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Effect Of Bodybuilding Calisthenics Training On Executive Ability In Old Women Adults

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The interest in research on the exercise ways to improve executive ability has grown rapidly in the last decade due to the aging global population. The exercise programs were mainly involved in walking, swimming and Tai Chi. However, there is little report about the bodybuilding calisthenics training efficiency in improving executive ability of old women adults.

PURPOSE: To examine the effect of bodybuilding calisthenics training on executive ability in old women adults.

METHODS: One hundred and twenty-seven old women adults (Age: 70.2 ± 7.6 yr., Height: 158.2 ± 4.9 cm, Mass: 59.4 ± 8.5 kg) were recruited from local newspaper advertisement, whose Mini-Mental Status Examination scores were above 25. All subjects were randomly divided into experimental group (EG, $n = 75$) and control group (CG, $n = 52$). The EG conducted bodybuilding calisthenics training 2 times a week, 45 minutes each, for 25 weeks, and the CG continued to follow normal daily activities. The Trail Making Test A and B (TMT-A, TMT-B) and Tapping Test were used to evaluate the executive ability, which were measured before and after intervention. Two-way (group vs. time) repeated measures ANOVAs were performed for each of the outcome parameters. Tukey's HSD tests were employed for post-hoc comparisons. The alpha level was set at $p < 0.05$.

RESULTS: 1. There were statistically significant group by time interactions for TMT-A ($F_{(1,124)} = 6.90, p < .001$), TMT-B ($F_{(1,124)} = 6.64, p < .005$) and Tapping Test ($F_{(1,124)} = 3.99, p < .05$). 2. The main effect for time was significant for TMT-A ($F_{(1,129)} = 29.48, p < .001$), TMT-B ($F_{(1,125)} = 22.09, p < .001$) and Tapping Test ($F_{(1,125)} = 9.35, p < .005$). The main effect for group was significant for TMT-A ($F_{(1,125)} = 4.77, p < .01$), TMT-B ($F_{(1,125)} = 4.74, p < .05$) and Tapping Test ($F_{(1,125)} = 3.14, p < .05$).

CONCLUSIONS: bodybuilding calisthenics training helped improving executive ability for old women adults.