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EFFECTS OF YOGIC PRACTICES COMBINED WITH BOKWA FITNESS TRAINING ON ATTENTION SPAN AND MENTAL HEALTH AMONG FEMALE UNIVERSITY ATHLETES

D.KANCHANA[1], DR. M. SENTHIL KUMAR[2]
[1]PH.D. SCHOLAR, DEPARTMENT OF YOGA, FACULTY OF SCIENCE AND HUMANITIES, SRM INSTITUTE OF SCIENCE AND TECHNOLOGY, KATTANKULATHUR-603203, TAMIL NADU, INDIA.
CORRESPONDING AUTHOR EMAIL: kd9961@srmist.edu.in
[2]ASSOCIATE PROFESSOR AND HEAD, DEPARTMENT OF YOGA, FACULTY OF SCIENCE AND HUMANITIES, SRM INSTITUTE OF SCIENCE AND TECHNOLOGY, KATTANKULATHUR-603203, TAMIL NADU, INDIA.
EMAIL: senthilm1@srmist.edu.in

Abstract
In the challenging field of intercollegiate sports, the mental well-being and reasoning functioning of athletes are as crucial as their physical competence, particularly amongst athletes in female university who should balance academic with the force of competition. attention span and Mental health be prominent as vital pointers of an athlete's mental and intellectual readiness, unswervingly prompting motivation, strategic thinking, and performance results both on and off the arena. Thus, the research examines the efficiency of a complete fitness style that mixes Bokwa fitness training and yogic practices for better enhancement. Making use design of randomized controlled trial, the research employed 120 members. Over a 14-week intervention period, the experimental group involved in a joint schedule of yogic practices highlighting mindfulness, precise breathing, and relaxation and Bokwa fitness exercises, endorsing emotive expression and cardiovascular strength. The control group sustained their typical athletic training practices short of any extra intervention. Pre- and post-intervention valuations were led using homogenous mental and cognitive measurement tools. The results intent to measure whether such a consolidative mind-body fitness program can meaningfully progress emotional well-being and attention span in contrast to conventional training alone. The outcomes are anticipated to provide empirical evidence supporting the addition of all-inclusive practices in university-level athletic programs. Such conclusions might offer ground-breaking approaches for sports psychologists, coaches, and athletic mentors looking for fostering sustainable performance, flexibility, and well-being in female athletes by means consolidative health interventions.

Keywords: Attention Span, Mental Health, Female Athletes, Combined Yogic, Bokwa Fitness Intervention.

INTRODUCTION

In the fast-paced world of intercollegiate athletics, mental health and mind are as important as any other part of the athlete's physical self (Pascoe et al., 2022). Women university athletes in particular endure intense academic pressures along with the rigors of competition, along with time limitations, resulting in compromised psychological health and cognitive functionality (Perry et al., 2021). Two of the core indicators of an athlete's psychological and cognitive status are mental health and attention span both critical for optimum performance in all respects on and off the field (Eganov et al., 2021). Mental health, that is, emotional well-being and stress management and psychological resilience is a very basis for all motivation, team spirit, and effective training and competition (Prien et al., 2020). Similarly, attention span, which involves the capacity to focus and sustain concentration, becomes important for strategic gameplay, quick decision-making, and effective execution of sport-specific skills (Chang et al., 2020).

Physical fitness programs are aspects of sports training, yet more recently, there has been a consensus that one should create an all-inclusive holistic intervention that also concerns the psychological and cognitive aspects (Kerr et al., 2014). Such approaches include yogic practices, which are rapidly becoming the frontrunners when it comes to known benefits for relaxation, emotional steadiness, and concentration enhancement (Åkesdotter et al., 2020). The combination of controlled breathing, mindfulness, and body awareness represents a non-invasive and easily available method for clearing the mind and alleviating stress. Bokwa fitness, a dance-oriented aerobic workout, includes a rhythmical, entertaining, and high-energy element of training that fosters emotional expression and

endurance when integrated. Together, these two forms provide a complete mind and body-integrated workout, which will subsequently probably increase the benefits each might have to offer alone.

Many of the current novel cognitive enhancement therapies (CET) comprise intensive, systematic individual training combined with medications (Wykes et al., 2011). As yoga includes mindfulness training and physical exercise, it can also be considered a CET (Wykes et al., 2011). Systematic studies indicate that the practice of yoga can improve spatial memory (Garfinkel et al., 1994), attention and recall (Nangia et al., 2012), reduce reaction times and increase accuracy in executive function tasks in a variety of settings (Gothe et al., 2013). Yoga can also improve strategic planning (Tran et al., 2001), concentration and emotional function in non-psychiatric populations (Berger and Owen 1992; Pilkington et al., 2005)

Yoga training is feasible for individuals with psychotic disorders (Bhatia et al., 2012). Some randomised controlled trials (RCTs) of yoga indicated improvements in psychopathology and social cognition in SZ (Vancampfort et al., 2012; Balasubramaniam et al., 2012; Cramer et al., 2013; Jayaram et al., 2013) although the benefits were variable (Broderick et al., 2015). Like yoga, physical exercise is thought to benefit cognitive functions in persons with or without psychiatric disorders (Dishman et al., 2006; Stein et al., 2007; Vaynman et al., 2006; Baker et al., 2010; Malchow et al., 2013; Knochel et al., 2012) The benefits of physical exercise for the former have been documented in large studies, as well as meta-analyses (Ten Have et al., 2011; Gorczynski et al., 2010).

Women athletes in university are at a bigger risk of facing delicate levels of several mental health problems, together with hopelessness, nervousness, eating disorders, and additionally, because of the additional gravities of academic goals, following career growth, and athletic competition and obligation. In a cross-sectional research study, using Chi-Square and multinomial regressions, published in the National Library of Medicine (NIH), it was measured that 22.3% of the student athletes were at risk for depression, 12.5% for anxiety, and 8% for low self-esteem (Weber et al.,2023). In addition, among college students aged 18 to 25, the frequency of depression was 17.0%, with anxiety disorders being 22.3% (Weber et al.,2023). Student athletes are under constant pressure due to the continuous evaluation and scrutiny of coaches, team mates, scouts, and opposing teams (Vallas et al., 2022). It was stated that many women athletes face mental and physical health issues both on and off the track along with the academic pressure.

Thus, this is the foremost reason why we have selected to study this populace. women athletes so as to decide what solutions can be provided to alleviate the current issue. The NCAA conducted a study in 2020 regarding mental health and conducted a follow-up study in 2022 which found that mental health conditions had elevated among student athletes (Johnson, 2022). According to the same study, rates of depression, anxiety, and mental tiredness have not decreased since the fall of 2020 and are still 1.5 to 2 times greater than those seen before the COVID-19 pandemic (Johnson, 2022). However, student respondents reported a reduced level of pessimism in the fall of 2021 (Johnson, 2022). Another study conducted by the American Psychological Association stated that campuses across the country are rethinking their ways of approaching mental health due to the increase in reported cases among students (Abrams, 2022). Since counseling centers have seen an influx in students reporting conditions such as depression and anxiety, educational institutions are trying to address public perceptions of mental health services by providing more than purely individual therapy-based approaches (Abrams, 2022).

A combination of individual performance ranking within a team and stigmas surrounding utilizing mental health resources are often correlated to student athletes experiencing mental health conditions (Johnson, 2022). In a study conducted by Limestone University and The University of South Carolina, the risk of depression ranges from 15.6% to 33.2% within the collegiate student athlete population, with first-year students and females often reporting more symptoms (Weber et al.,2023).

Introduction to an experiment on a randomized control trial design to assess the effectiveness of combined yogic practices and Bokwa practices through fitness training in enhancing female university players' attention span and mental health over 14 weeks. Numbering sixty, the members in the experimental group were provided the intervention; sixty others constituted the control group, remaining on their usual training routine. In tracking and comparing intervention effects on cognitive and psychological dimensions of sporting performance, it is aimed to provide some empirical evidence as to whether holistic fitness approaches allow improvements. It is expected that the findings will provide opportunities for creativity to coaches, sport psychologists, and athletic trainers in building innovative ways to support the overall development of female athletes at the university level.

STUDY OBJECTIVE

The chief aim of this research is to assess the efficiency of a combined intervention concerning yogic practices and Bokwa fitness training in amplifying the attention span and mental health of athletes in female university. The study endeavors to check whether the incorporation of these all-inclusive, mind-body practices can suggestively progress emotional well-being and intellectual functioning that are very important for athletic performance and academic accomplishment. A significant goal is to conduct comparison of the cognitive and emotional consequences of members who involve in this focused training program with those who stay in their standard

athletic training practices. Furthermore, this study tries to find the contribution empirical evidence for supporting the incorporation of alternative fitness modes into traditional sports training programs at the university level.

SIGNIFICANCE OF THE STUDY

Usually, the sports domain is known for offering importance only towards physical ability development, better strategies for training in order to achieve better performance, while on the other hand mental health and wellbeing of the athletes and sportsmen are most of the time disregarded. Athletes especially female athletes face additional issues and the increase in stressors like anxiety level and depression tend to show its effects on both academic performance ad their sports contribution. Thus, it is significant to conduct a study on this area as study on intellectual health of female athletes in university can offer perception on in what way experiences and knowledges in university athletics can affect their psychological health; moreover, study in this field would probably lead to enhanced strategies, procedures, and resources in place to sustain the psychological health of female athletes throughout their university years.

METHODOLOGY

In evaluating scientifically, the effect of yogic practices with Bokwa fitness on span of attention and mental health in female university players, the research study made use of a randomized control trial (RCT) design. A whole of 120 participants were drawn from various university sports teams and randomly allocated into two groups; this includes the experimental group (n = 60) and the control group (n = 60). Both groups were matched for age, height, and baseline characteristics to engineer homogeneity and demise of confounding variables. The experimental group was put on a structured intervention program that included yogic practices Bokwa fitness sessions nearly for 14 weeks, with a training rate of six days in a week. Each session included 30 minutes of yogic components followed by further 30 minutes of Bokwa fitness exercises together with their sporting training.
The control group, on the other hand, continued with their usual sports training program without any other intervention. Pre- and post-test measurements for both mental health and span of attention were obtained for all participants. Mental health was assessed with validated psychometric instruments such as the DASS-21, while span of attention was measured with standardized neuropsychological instruments such as Continuous Performance Test (CPT). Appropriate statistical tests were done on the data collected for assessing for the significance of any change observed between or within groups. This experimental design thereby gave a well-controlled study into the efficacy of the intervention, providing useful information on the role of holistic fitness approaches in facilitating psychological and cognitive outcomes for female athletes at the university level.

Participants

The study population comprised 120 female university players aged 18-25 years, representing various sports disciplines including volleyball, basketball, and athletics. All subjects had to be undergraduate or postgraduate students who had completed at least 1 year of continuous sports training. The groupings of experimental (n=60) and control (n=60) were achieved via simple random sampling. All members offered inscribed informed consent before commencing the research, and ethical consent was gotten from an official evaluation board. Care was taken to see that none of the participants had any pre-existing medical or psychological conditions that would hinder their performance or participation in the said intervention. The exclusion criteria included participants with pre-existing respiratory or cardiovascular comorbidities, psychological disorders, injuries that may always interfere with all their participating in the intervention or program.

Intervention

The experimental group underwent an intervention or structured program of yogic practices and combined with Bokwa fitness training for 14 weeks. There were six weekly sessions of 60 minutes each. In each session, yoga was the first 30 minutes, loosening practice, 2 rounds of Surya Namaskar followed by Nadi Shuddhi, Bhramari pranayama; after this follows 30 minutes of Bokwa fitness, which is a dance and rhythm-based high-energy cardio workout. The control group continued their regular sports training without adding any other interventions. The program was designed and monitored by certified yoga and fitness trainers throughout the training period and ensured that the program was consistent and safe.

Data Analysis

Testing the efficacy of yogic practices and bokwa fitness techniques to certain psychological parameters will be undertaken in female players through inferential statistical methods which lead to all the meaningful conclusions. The main outcome measures under study involves attention span and mental health as measured both before-and-after intervention in experimental and control groups.

Table 1. Descriptive Statistics

	Min	**Max**	**M**	**Std. Err**	**Std. Dev**

Age of the Athlete	18	25	21.53	0.19	2.13
Height (cm)	155.00	180.00	168.03	0.61	6.63
Body Mass (Kg)	18.01	23.81	20.88	0.13	1.45
Fat free mass (kg)	37.00	55.00	45.96	0.47	5.09

The descriptive analysis of the participants revealed that the age of the female athletes at the university who are aged around 18 to 25 years and the mean age was found to be 21.53 years (±2.13); implying a relatively young and homogenous group suitable for athletic training. Height wise, the range of the subjects was from 155.00 cm to 180.00 cm with a mean height of 168.03 cm (±6.63), indicating average height common among university athletes. The athletes showed a body weight with limits between 18.01 kg and 23.81 kg with an average of 20.88 kg (±1.45). The fat-free mass, which would imply lean body mass minus fat, ranged from 37.00 kg to 55.00 kg, with a mean of 45.96 kg (±5.09). The above values suggest a healthy and active set of participants, essential for evaluating the effects of any fitness interventions like yogic practices and training in Bokwa.

Table 2. Independent sample t-test

		N	M	Std. Dev	Std. ErrMean	t-value	p-value
Age of the Athlete	**Experimental Group**	60	21.92	2.32	0.30	2.041	0.043*
	Control Group	60	21.13	1.85	0.24		
Height (cm)	**Experimental Group**	60	166.80	5.87	0.76	-2.065	0.041*
	Control Group	60	169.27	7.15	0.92		
Body Mass (Kg)	**Experimental Group**	60	21.18	1.23	0.16	2.338	0.021*
	Control Group	60	20.57	1.59	0.21		
Fat free mass (kg)	**Experimental Group**	60	46.92	5.23	0.68	2.09	0.039*
	Control Group	60	45.00	4.80	0.62		

The above test was basically carried out for the determination of the extent of significance two groups of female university players on selected demographic and physiological characteristics.

The age of the experimental athletes averaged 21.92 years (±2.32) and was thus marginally greater than that of control athletes, who averaged 21.13 years (±1.85). The age variance was significant statistically ($t = 2.041$, $p = 0.043$), indicative of a small difference that influenced the response to intervention; the two groups were still close in age. With respect to the height, the experimental group averaged 166.80 cm (±5.87) while the control group averaged slightly taller at 169.27 cm (±7.15). The variance was also significant statistically ($t = -2.065$, $p = 0.041$), showing that indeed a meaningful difference exists between the two groups with respect to stature, and therefore, this variable is to be considered in the interpretation of any performance data.

It was same ($t = 2.338$, $p = 0.021$) in mean body mass 21.18 kg (±1.23) in the experimental group vs. 20.57 kg (±1.59) in the control group, potentially a manifestation of pre-intervention differences in dietary intake or training. The fat-free mass, a measure of lean muscle mass, was also significantly different, with the experimental group showing a fat-free mass of 46.92 kg (±5.23) while the control group presented 45.00 kg (±4.80); t-test results were also significant ($t = 2.09$, $p = 0.039$), thus indicating that the experimental group entered the study with somewhat more athletic body composition. In summary, randomization notwithstanding, the experimental and control populations initially differed significantly with respect to age, height, body mass, and fat-free mass. These are imbalances that ought to be recognized and controlled in any further analysis, particularly when examining the post-intervention effects of yogic practices and Bokwa fitness training.

Table 3. ANCOVA – Attention Score Pre and Post (out of 100)

Descriptive Statistics			
DepVar	Attention score in Post-test		
Study Grp	M	Std. Deviation	N
Experimental Group	70.0667	13.98530	60

Control Group	49.3667	12.53195	60				
Total	59.7167	16.81845	120				
Between-Subjects Effects- test							
DepVar	Attention score in Post-test						
	Type III SS	v	MS	f	Sig.	N/C	Obd Power [b]
Corrected Model	13607.741[a]	2	6803.870	39.698	0.000	79.396	1.000
Intercept	18978.464	1	18978.464	110.733	0.000	110.733	1.000
Pre-test attention score	753.041	1	753.041	4.394	0.038	4.394	0.547
study_gro	12813.066	1	12813.066	74.760	0.000	74.760	1.000
Error	20052.626	117	171.390				
Total	#########	120					
Corrected Total	33660.367	119					
a. R^2= .404 (Adj R^2= .394)							
b. Alpha calc = .05							
Estimates							
DepVar	Attention score in Post-test						
			95% Confidence Interval				
Study Group	Mean	Std. Error	Lower Bound	Upper Bound			
Experimental Group	70.050[a]	1.690	66.703	73.397			
Control Group	49.383[a]	1.690	46.036	52.730			
a. Pre-test attention score = 34.0250.							
Pairwise Comparisons							
DepVar	Attention score in Post-test						
(I) Study Group		M Diff (I-J)		Sig.[b]	95% Confidence Interval for Difference [b]		
			SE		LB	UP	
Experimental Group	Control Group	20.667*	2.390	0.000	15.933	25.401	
Control Group	Experimental Group	-20.667*	2.390	0.000	-25.401	-15.933	
According to projected marginal means							
*. The MD is with.05 level significance							

b. Adj for multiple comparisons: Bonferroni.	

In analyzing the effectiveness of yogic practices and Bokwa fitness training on the attention span of female university players, ANCOVA was used, with the pre-test score for attention being a covariate for baseline differences. From the descriptive statistics, the experimental group (N = 60) had a higher post-test mean attention score (M = 70.07, SD = 13.99) than the control group (M = 49.37, SD = 12.53), which indicates an apparent positive effect of the intervention.

Tests of Between-Subjects Effects: The ANCOVA results confirm that the difference is statistically significant. The corrected model was significant ($F(2,117) = 39.698, p<0.001$) therefore, suggesting that the model that included the covariate (pre-test attention score) explained a significant amount of variance in the post-test attention score. The pre-test attention score was a covariate with significant influence ($F(1,117) = 4.394$, $p=0.038$) shows that those early attention levels had weak but statistically significant effects on the results.

Predominant influence of treatment group (experimental vs. control) displayed a significant effect ($F(1,117) = 74.760$, $p < 0.001$), showing that group assignment heavily weighed into final post-test attention scores, despite pre-test differences. -The model explained almost 40.4% of post-test attention scores' variability ($R^2 = 0.404$, Adjusted $R^2 = 0.394$), depicting a large effect size. The model explained around 40.4% of the variance in the post-test attention scores ($R^2 = .404$, Adjusted $R^2 = .394$), indicating a large effect size.

The estimated marginal means considerably strengthen this finding. For the experimental group, the adjusted mean was 70.05 (SE = 1.69), and showed a 95% confidence interval of 66.70 to 73.40 after adjusting for pre-test scores. For the control group, the adjusted mean was 49.38 (SE = 1.69), which is associated with a 95% confidence interval of 46.04 to 52.73. The Bonferroni-adjusted comparison of pairwise conditions showed that the experimental group outdone the control group in post-test attention scores by 20.67 points ($p < 0.001$). This considerable difference indeed affirms the effectiveness of the intervention.

It was found that the ANCOVA results, in general, revealed that the combination of yogic practice with Bokwa fitness training was effective in increasing the attention span of the experimental group related to control group. After taking pretest levels of attention into account, the effects remained significant with a huge size effect and strong statistical control. This indicates that the integrated training program is a worthy method for cognitive enhancement for female athletes at the university level.

Table 4. ANCOVA – DASS Mental health score (pre and post)

Descriptive Statistics							
Dependent Variable:	DASS - Mental Health Score Post						
Study Group	Mean	Std. Deviation	N				
Experimental Group	25.5333	3.19144	60				
Control Group	37.3833	3.38036	60				
Total	31.4583	6.79087	120				
Tests of Between-Subjects Effects							
Dep Var	DASS - Mental Health Score Post						
	Type III SS	ν	MS	f	Sig.	N/C	Obd Power b
Corrected Model	4279.116[a]	2	2139.558	207.109	0.000	414.219	1.000
Intercept	571.043	1	571.043	55.277	0.000	55.277	1.000
DASS - Mental Health Score pre	66.441	1	66.441	6.431	0.013	6.431	0.711
Study group	4060.714	1	4060.714	393.078	0.000	393.078	1.000
Error	1208.676	117	10.331				
Total	124243.000	120					
Corrected Total	5487.792	119					
a. $R^2 = .780$ (Adj $R^2 = .776$)							

b. alpha value = .05						
Estimates						
Dependent Variable:	DASS - Mental Health Score Post					
Study Group	Mean					
		Std. Error				
Experimental Group	25.610[a]	0.416	24.786	26.434		
Control Group	37.306[a]	0.416	36.482	38.130		
a. Covariates DASS - Mental Health Score Pre = 39.7667.						
Pairwise Comparisons						
Dependent Variable:	DASS - Mental Health Score Post					
(I) Study Group		Mean Difference (I-J)		Sig.[b]	95% Conf Int for Dif	
			SE		LB	UB
Experimental Group	Control Group	-11.696*	0.590	0.000	-12.865	-10.528
Control Group	Experimental Group	11.696*	0.590	0.000	10.528	12.865
According to projected marginal means						
*. The MD is at the .05 level of significance						
b. Adj0 for multiple comparisons: Bonferroni.						

An ANCOVA was employed to evaluate the effect of yogic practices along with Bokwa Fitness training on mental health among university female players. The pretest DASS mental health scores were taken as covariate to adjust for the initial variances between the both groups. The descriptive statistics indicate a clear group difference wherein the experimental group (N=60) scored an average post-test DASS rating of 25.53 (SD=3.19), but the control group scored significantly higher with an average DASS rating of 37.38 (SD=3.38). A lower DASS score means better mental health; thus, the experimental group participants showed upgraded mental health with appreciable improvement after the 14-week intervention.

Tests of Between-Subjects Effects: It was highly significant for corrected model ($F(2,117)=207.109$, $p<0.001$) that proves that the model in whole explains significant proportion of variance in mental health post-test scores. The pre-test mental health score was seemed to be a substantial covariate ($F(1,117)=6.431$, $p=0.013$), meaning there were just some effects of baseline mental health levels on outcomes post-test. Most importantly, that which concerned the study group (experimental vs. control) has turned out to be extremely significant ($F(1,117)=393.078$, $p<0.001$), confirming that the intervention had highly affected mental health outcomes. The R^2 value is 0.780 (adjusted $R^2=0.776$), thus an approximation of 78% variance in post-test DASS scores accounted by this model, which means a very huge effect size, showing the strength of this intervention.

Concerning estimated marginal means, the clearer picture of the effect of intervention has come from adjustment using baseline scores: Experimental and control groups had an adjusted mean score of 25.61 (SE="0.416") with a 95% confidence interval between 24.79 and 26.43, and 37.31 (SE="0.416") from 36.48 to 38.13, respectively; this difference of almost 12 points strengthens the claim that there is a substantial change in mental health for the experimental group.

The pairwise comparisons, according to Bonferroni adjustment, show that the variation amongst groups is significant statistically. The average variance amid both the groups was found to be -11.70 ($p < 0.001$), with a 95% confidence interval extending from -12.87 to -10.53. With this, it could be inferred that the experimental group's DASS score is much lower (indicating less psychological distress) in contrast to control group.

CONCLUSION

With the intention of offering better solutions and support for female athletes who come across mental and physical health issues in university, it is important that these outcomes be noted and additional research occur. Though,

there is more area for development on the behalf of university for ensuring that the female athletes that require no assistance, obtain the passable attention they require with the intention of managing their physical and psychological health issues. There is also a necessity for addressing apprehensions for wherefore so female athletes are employing psychological and physical health resources on university campus.

REFERENCES

1. Pascoe, M., Pankowiak, A., Woessner, M., Brockett, C. L., Hanlon, C., Spaaij, R., ... & Parker, A. (2022). Gender-specific psychosocial stressors influencing mental health among women elite and semielite athletes: a narrative review. *British Journal of Sports Medicine*, *56*(23), 1381-1387.
2. Perry, C., Champ, F. M., Macbeth, J., & Spandler, H. (2021). Mental health and elite female athletes: A scoping review. *Psychology of sport and exercise*, *56*, 101961.
3. Eganov, A. V., Romanova, L. A., Nikiforova, S. A., Korneeva, S. V., & Tselishcheva, E. I. (2021). Dependence of athletic performance on mental health in female students. *Journal of Physical Education and Sport*, *21*(6), 3433-3438.
4. Prien, A., Feddermann-Demont, N., Verhagen, E., Twisk, J., & Junge, A. (2020). Neurocognitive performance and mental health of retired female football players compared to non-contact sport athletes. *BMJ open sport & exercise medicine*, *6*(1).
5. Chang, C. J., Putukian, M., Aerni, G., Diamond, A. B., Hong, E. S., Ingram, Y. M., ... & Wolanin, A. T. (2020). Mental health issues and psychological factors in athletes: detection, management, effect on performance, and prevention: American medical society for sports medicine position statement. *Clinical Journal of Sport Medicine*, *30*(2), e61-e87.
6. Kerr, Z. Y., DeFreese, J. D., & Marshall, S. W. (2014). Current physical and mental health of former collegiate athletes. *Orthopaedic journal of sports medicine*, *2*(8), 2325967114544107.
7. Åkesdotter, C., Kenttä, G., Eloranta, S., & Franck, J. (2020). The prevalence of mental health problems in elite athletes. *Journal of science and medicine in sport*, *23*(4), 329-335.
8. Wykes T, Huddy V, Cellard C, Mcgurk SR, Czobor P. A meta-analysis of cognitive remediation for schizophrenia: methodology and effect sizes. Am J Psychiatry. 2011;168:472–485.
9. Garfinkel MS, Schumacher HR, JR, Husain A, Levy M, Reshetar RA. Evaluation of a yoga based regimen for treatment of osteoarthritis of the hands. J Rheumatol. 1994;21:2341–2343.
10. Nangia D, Malhotra R. Yoga, cognition and mental health. J Indian Acad Appl Psychol. 2012;38:262–269.
11. Gothe N, Pontifex MB, Hillman C, Mcauley E. The acute effects of yoga on executive function. J Phys Act Health. 2013;10:488–495. doi: 10.1123/jpah.10.4.488.
12. Tran MD, Holly RG, Lashbrook J, Amsterdam EA. Effects of hatha yoga practice on the health-related aspects of physical fitness. Prev Cardiol. 2001;4:165–170.
13. Berger BG, Owen DR. Mood alteration with yoga and swimming: aerobic exercise may not be necessary. Percept Mot Skills. 1992;75:1331–1343.
14. Pilkington K, Kirkwood G, Rampes H, Richardson J. Yoga for depression: the research evidence. J Affect Disord. 2005;89:13–24.
15. Bhatia T, Agarwal A, Shah G, et al. Adjunctive cognitive remediation for schizophrenia using yoga: an open, non-randomized trial. Acta neuropsychiatr. 2012;24:91–100.
16. Vancampfort D, Vansteelandt K, Scheewe T, et al. Yoga in schizophrenia: a systematic review of randomised controlled trials. Acta Psychiatr Scand. 2012;126:12–20.
17. Balasubramaniam M, Telles S, Doraiswamy PM. Yoga on our minds: a systematic review of yoga for neuropsychiatric disorders. Front Psychiatry. 2012;3:117
18. Cramer H, Lauche R, Klose P, Langhorst J, Dobos G. Yoga for schizophrenia: a systematic review and meta-analysis. BMC Psychiatry. 2013;13:32.
19. Jayaram N, Varambally S, Behere RV, et al. Effect of yoga therapy on plasma oxytocin and facial emotion recognition deficits in patients of schizophrenia. Indian J Psychiatry. 2013;55(Suppl. 3):S409–S413.
20. Broderick J, Knowles A, Chadwick J, Vancampfort D. Yoga versus standard care for schizophrenia (review) In: The Cochrane Collaboration, JohnWiley & Sons Ltd, editor. Cochrane Database of Systematic Reviews 2015.
21. Dishman RK, Berthoud HR, Booth FW, et al. Neurobiology of exercise. Obesity (Silver Spring) 2006;14:345–356.
22. Stein DJ, Collins M, Daniels W, Noakes TD, Zigmond M. Mind and muscle: the cognitive-affective neuroscience of exercise. CNS Spectr. 2007;12:19–22.

23. Vaynman S, Gomez-Pinilla F. Revenge of the 'sit': how lifestyle impacts neuronal and cognitive health through molecular systems that interface energy metabolism with neuronal plasticity. J Neurosci Res. 2006;84:699–715.
24. Baker LD, Frank LL, Foster-Schubert K, et al. Aerobic exercise improves cognition for older adults with glucose intolerance, a risk factor for Alzheimer's disease. J Alzheimers Dis. 2010;22:569–579.
25. Malchow B, Reich-Erkelenz D, Oertel-Knochel V, et al. The effects of physical exercise in schizophrenia and affective disorders. Eur Arch Psychiatry Clin Neurosci. 2013;263:451–467.
26. Knochel C, Oertel-Knochel V, O'Dwyer L, et al. Cognitive and behavioural effects of physical exercise in psychiatric patients. Prog Neurobiol. 2012;96:46–68.
27. Ten Have M, DE Graaf R, Monshouwer K. Physical exercise in adults and mental health status findings from the Netherlands mental health survey and incidence study (NEMESIS) J Psychosom Res. 2011;71:342–348.
28. Gorczynski P, Faulkner G. Exercise therapy for schizophrenia. Schizophr Bull. 2010;36:665–666
29. Abouzaid S, Jutkowitz E, Foley KA, Pizzi LT, Kim E, Bates J. Economic impact of prior authorization policies for atypical antipsychotics in the treatment of schizophrenia. Popul Health Manag. 2010;13:247–254.
30. Weber, S.R., Winkelmann, Z.K., Monsma, E.V., Arent, S.M. and Torres-McGehee, T.M. (2023) An Examination of Depression, Anxiety, and Self-Esteem in Collegiate Student-Athletes. International Journal of Environmental Research and Public Health, 20, 1211.
31. Vallas, D., Pelosi, G. and Wellness Consulting, D. (2022) Mental Health of Student Athletes. https://sais.org/resource/mental-health-of-student-athletes/
32. Johnson, G. (2022) Mental Health Issues Remain on Minds of Student-Athletes. https://www.ncaa.org/news/2022/5/24/media-center-mental-health-issues-remain-on-minds-of-student-athletes.aspx
33. Abrams, Z. (2022) Student Mental Health Is in Crisis. Campuses Are Rethinking Their Approach. Monitor on Psychology. https://www.apa.org/monitor/2022/10/mental-health-campus-care