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Editorial

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For the generations born in the years post 1900, this PANDEMIC is a shocking experience. It is read by all that every 100 years, the natural calamities in some or other form attack the life on planet. But experiencing the actual such kind of a situation is faced only in 2020, and it has moved the human population across the GLOBE.

According to the statistical figures in India, the number of COVID 19 affected people has crossed a crore during Dec 2020, that is merely in 11 months from its outbreak in March 2020. Similar scenario in various countries which has moved people at their core.

The psychological impact on the various age groups is beyond to be worded, since this PANDEMIC has affected the economy, social relationships for the people across the planet. The feeling of helplessness experienced while bidding "Good Bye" to near and dear ones, despite having developed medical facilities in most of countries, has carved a permanent scar in hearts of many.

The uncertainty about future has brought numbness to all-may be a layman or a scientist and researcher or a medical practitioner. The struggle to fight the virus has been on and on at every level of society. The cause, spread, effect and damage is a mystery full of unpredictability.

The long period of lock down in most of countries have affected the total development, as if society is pulled back by ages. The stoppage of physical activities has been harmful to people in every walk of life. The outdoor movements when are at standstill, the human minds face confusion, frustration and may also be depression.

For youth it has been a torture to be away from free activities of sports and the social fellowships and the same has lead to mental trauma. Being an educationist, catering majorly to the age groups from 19-25, the technology has helped in various ways, may it be teaching learning or keeping the virtual communication alive. But all said and done, the outdoor activities are missed be one and all. My students' one question–" When will college start normal way?" is unanswered and that is brings a set of questions -

- *What will happen next?*
- *When will the world recover and get back to normalcy?*
- *When will all free outdoor activities like sports, yoga, cultural and social gatherings return to normal?*

Surely to say that "NO ONE CAN PREDICT".

However, the acceptance of the situation with positive mind will halp to make the life little better. PANDEMIC has taught us the value of savings, planning, and discipline / readiness of mind needed to be self-sufficient for our basic needs to live life comfortably.

I would like to advise all to keep mind occupied with the help of TECHNOLOGY which has opened the virtual world for one and all. Be blessed ever.

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Research on Construction of Professional Strength Development Exercises for Women Athletes Rowing National Youth Team at Da Nang National Sports Training Center

Dr. Nguyen Xuan Hung: Department of Management and Management Department of Sports and Physical Training, Da Nang University of Sports and Physical Training.

Summary:

The use of traditional research methods has evaluated the Professional strength of woman female rowing boat racing young nation team at National Sports Training Center Da Nang as a basis for selection, Appropriate exercise to develop endurance for a female athlete rowing boat racing young nation team at National Sports Training Center Da Nang, olong with a science-based program that is tailored to the actual conditions of the boat racing training program at the National Sports Training Center Da Nang.

Keywords: Professional strength, National Sports Training Center Da Nang, Current status.

Question:

Rowing is one of the races of the Boat Race in Vietnam, the sport industry is determined to be a key Olympic sport belonging to the group that is preferred investment with a target medal in the Sea Games, Asiad, and Olympic.

This is confirmed through the advancement of rowing yachts through precious medals in recent Seagames. However, in many ways, the Vietnam rowing boat racing was also appreciated in the young, the achievement is much weaker in Asia and the world Because nowaday world boat racing has grown at a very high speed and the level of Vietnamese athletes is low. In fact, due to the many causes of impact that have influenced the achievement of the home water Boat Race, and one of the predominant causes is the specialized endurance of Vietnamese rowing athletes who are limited, therefore, the research builds exercises to develop the professional endurance for women athletes Rowing National youth team at Da Nang National Sport Training Center is urgent problem.

Research Method:

The research process uses the following methods: Analyse and synthetic document; observe pedagogy; check pedagogy; experiment pedagogy; mathematical statistics.

Results and Discussion:

1. Select professional endurance development exercises for female rowers in the national youth team at the Danang National Sports Center.

Based on the exercises selected through reference materials, pedagogical observations and direct interviews. Begin from the facts analyzed through the synthesis of professional documents, and consulted with many experts and coaches with experience in teaching and coaching domestic and foreign boat racing, firstly, the project has selected 26 exercises and divided into 2 groups to improve professional strength for female rowing boat races in the national youth team. In order to have an accurate and effective choice while ensuring the

objectivity and science of the topic, conducting interviews with domestic and foreign experts, coaches, the content of the interview is to determine the priority of using the articles. practice in 3 levels:

- Priority 1: The important exercises
- Priority 2: The normal exercises
- Priority 3: Exercise does not matter

Corresponds to the score (priority 1 is 3 points, priority 2 is 2 points, priority 3 is 1 point).

Selection method: We conducted the selection of exercises with the overall score is quite good (70% of the maximum total points: 63/90 points). Results are presented in the following table.

Like that, in the 26 exercises that the subject gave the interview, the topic has selected 8 exercises with the approval and high priority to be used in the development of professional endurance of female athletes. boat rowing national youth team at Danang National Sports Center.

Table 1. Interview Results on Selection of Professional Endurance Exercises for Female National Athletes (n = 30)

No.	Exercises / Interview Results	Exercise Priority						Total
		Priority 1		Priority 2		Priority 3		
		Votes	Total	Votes	Total	Votes	Total	
Group of Endurance training exercises End-1. (Circuit below 150times/minute)								
1	Rowing 2×2 km, r=30	5	15	6	12	19	19	46
2	Rowing tug	26	85	3	6	1	1	85
3	Rowing1×8 km	5	15	20	40	5	5	60
4	Rowing continuously 20 km	25	75	1	2	4	4	81
5	Rowing 30×300 m, r=30	8	24	15	30	7	7	61
6	Rowing 50×1 km, r=3 minute	7	21	8	16	15	15	52
7	Rowing 3×2 km, r=3 minute	24	72	6	12	0	0	84
8	Rowing 8×1, 5 km, r=2 minute	10	30	80	16	12	12	58
9	Rowing 8 km	3	9	6	12	21	21	42
10	Rowing 10×500 m, r=1 minute	11	33	4	8	15	15	56
11	Run 2000 m	9	27	11	22	10	10	59
12	Rowing 1×6 km	12	36	5	10	13	13	59

13	Rowing 1×12 km	17	51	10	20	15	15	74
Aerobic Capacity training exercises End-2. (Circuit 150-180times/minute)								
14	Rowing 6×800 m	5	15	10	20	15	15	50
15	Rowing 2×1.5 km, r=1 minute	7	21	8	16	15	15	52
16	Rowing 3×1 km, r=30	3	9	6	12	21	21	42
17	Rowing 4×800 m, r=30	10	30	5	10	15	15	55
18	Rowing 8×400 m, r=20	6	18	10	20	14	14	52
19	Rowing 15×200 m, r=20	6	18	13	26	11	11	55
20	Rowing test 2000 m	24	72	1	2	5	5	79
21	Rowing 1×2500 m	10	30	15	30	5	5	65
22	Rowing10×250 m, r=20	7	21	10	20	13	13	54
23	Rowing 10×500 m, r=25	15	45	9	18	6	6	69
24	Rowing 12×200 m, r=20	4	12	8	16	18	18	48
25	Rowing 6×1000 m, r=60	4	12	6	12	20	20	44
26	Rowing 20×250 m. r=30	23	69	2	4	5	5	78

2. Evaluate the effectiveness of selected professional endurance exercises.

To assess the effectiveness of the application of professional endurance training exercises for female Rowing boat race athletes at the Danang National Sports Training Center, the subject examined the endurance level of the research subjects. Experimental pre-test according to 3 tests on 10 female athletes. The goal is to look at the differences in professional endurance levels of the two groups. Data has been processed in statistical mathematics. Test results are presented in Table 2.

Table 2. Comparison of the results of tests to assess the professional endurance level of the experimental and control women groups. (nA = nB = 05)

Test	Result Evaluation					
	Control group	Experimental group	Compare two groups			
	$\overline{X}$	$\overline{X}$	σ	tcount	tboard	P
Test 2500m (s)	628	627	7.054	0.792	2.776	0.05
Test 4000m (s)	1156	1165	14.08	0.817	2.776	0.05
Test VO2 max (ml/kg/minute)	54.7	54.73	0.618	0.419	2.776	0.05

The results in Table 2 show that: Achievements of all 3 contents of assessment and evaluation of professional endurance level have tcount < tboard at probability threshold P = 0.05. This proves that the achievement between the experimental group and the control group is no difference, in other words, the professional strength level and the 2000m rowing rowing achievement of the two groups in the time before the experiment were similar. This is also the basis for the topic to divide the two groups logically.

To evaluate the effectiveness of exercises, after conducting experiments, the topic used the tests used in the original group to check again. The data obtained after the experiment was processed statistically mathematically by self-collating method for each group. Results are presented in table 3.

Table 3. Comparison of self-control achievement of professional endurance tests of 2 groups of control and experimental women. (n = 05)

Test	Result Evaluation					
	Before experiment	After experiment	Compare			
	$\overline{X}$	$\overline{X}$	σd	tcount	tboard	P
Women's Control Group						
Test rowing 2500m (s)	628	603	12.289	4.369	4.303	<0.05
Test rowing 4000m(s)	1156	1123	65.239	4.392	4.303	<0.05
Test VO2max	54.7	54.75	0.917	5.282	4.303	<0.05
Women's Experimental Group						
Test rowing 2500m (s)	627	580	19.975	10.665	4.303	<0.05
Test rowing 4000m(s)	1165	1040	80.876	8.673	4.303	<0.05
Test VO2max	54.73	58.45	2.182	11.222	4.303	<0.05

Through Table 3. shows: Achievements at 3 test tests of the control group as well as the experimental group at two points before and after the experiment through self-referencing method are significant at probability threshold P = <0.05% with confidence needed. However, for the experimental group, the results of the two test have tcount higher than tboard compared to the control group.

Therefore, the choice of the application of the exercises we have compiled for the experimental group is much more effective than the exercise groups often used to train female athletes of the national youth team boat racing at the Da Nang Sport Training Center. It proves that the achievement between the experimental group and the control group has a statistically significant difference, that is, the level of professional endurance in the experimental group is better than the control group.

To confirm the effectiveness of the selected exercises, the topic compares the post-experimental achievements of the two groups. The results are presented in Table 4.

Table 4. Comparison of the achievement test of professional endurance tests between two experimental and control female groups. (Na = nB = 05)

Test	Result Evaluation					
	Control group	Experimental group	Compare two groups			
	$\overline{X}$	$\overline{X}$	σc	tcount	tboard	P
Test rowing 2500m (s)	601	580	40.737	2.796	2.776	<=0.05
Test rowing 4000m (s)	1123	1040	146.445	2.818	2.776	<=0.05
Test VO2 max	4.75	58.45	4.979	2.782	2.776	<=0.05

Table 4 shows the pre-empirical results of the two control groups and the experiments in the three test tests as follows.

- At the 2500m rowing test, we have: tcount = 2,796> tboard = 2,776. Therofore, the difference in achievement between the experimental and control groups was significant at the probability threshold P <= 5%.
- At the 4000m rowing test, we have: tcount = 2,818> tboard = 2,776. Therofore, the difference in achievement between the experimental and control groups was significant at the probability threshold P <= 5%.
- At the test VO2max we have: tcount = 2,782> tboard = 2,776. Therefore, the difference in achievement between the experimental and control groups was significant at the probability threshold P <= 5%. Therefore: After the experiment time, the achievement of all 3 contents of the evaluation and evaluation of the professional endurance level of the subjects have a tcount > tboard in probability threshold P < =0.05. This proves that the results between the experimental group and the control group have statistically significant differences, that is, the level of professional endurance in the experimental group is better than the control group.

To confirm the superiority of the use of selection and application of exercises, the subject conducted using S.Browdy's index to evaluate the growth rate of achievement before and after the experiment of both control groups and experiment groups. Results are presented in Table 5.

Table 5. Growth rate of achievement of the professional endurance tests of female athletes in both control and experimental groups after 42 weeks of experiment. (n = 05)

Test	Growth Rate W%					
	Control Group			Experimental Group		
	Before experiment	After experiment	W%	Before experiment	After experiment	W%
Test rowing 2500m(s)	628	601	1.32%	627	580	5.35%
Test rowing 4000m (s)	1156	1123	1.47%	1165	1040	8.96%
Test VO2 max	54.7	54.75	1.70%	54.73	58.45	8.94%

Table 5 shows that the growth rate of achievement in all 3 professional endurance tests, the achievement index of the experimental group (5.35%, 8.96%, 8.94%) is much higher than the control group (1.32%, 1.47%, 1.70%)

Through the table above shows that after the experimental process, the test results of the experimental and control groups had a difference compared to before the experiment. In the experimental group, however, the difference was more pronounced than in the control group.

Conclude:

The thesis has selected and built 8 exercises of professional endurance development divided into two large groups.

- End-1 aerobic endurance training exercises with 4 exercises.
- End-2 aerobic exercise training group with 4 exercises.

With the above 8 exercises are applied in professional strength development training for rowing athletes of the national youth team at the Danang National Sports Training Center for 42 weeks. The results show that the exercises that the project has selected and built are more effective in developing endurance and competitive performance than the exercises that the young rowing team coaches often do. used with necessary statistical confidence P <= 5%.

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Anbolic (anbolic (an), furosemide (fu) and methandienone (me)) Components in Sports by Chemical Method

Dr. Dam Trung Kien: Bac Ninh Sports University

Abstract:

Analysis of doping compounds is a matter of concern to scientists. Graphene oxide (GO) was electrochemically reduced on a glassy carbon electrode (GCE) surface (ERGO/GCE). Under the optimized conditions, the method allowed simultaneous determination of anbolic (AN), furosemide (FU) and Methandienone (ME). The results showed that the denatured electrode for the dissolved signal of all three analytes with anbolic value: 0.36 μM and quantitative limit of 1.07 to 1.42 μM; furosemide: 0.25 μM and quantitative limits from 0.75 to 1.00 μM; Methandienone: 0.23 μM and quantitative limit from 0.70 to 0.93 μM.

Keywords: Doping, anbolic, furosemide, Methandienone, Reduced Graphene oxide, Electrochemical.

Posting Issue:

Doping and anti-doping are one of the topical issues in sports and in sports medicine in specific. In the world and perhaps in our country, the abuse of doping in sports training and competition is more and more and more sophisticated. The sociological research of doping use cases has found the following four reasons: For the sake of the resident, the governmental; Because of the expectations of the sports fanatic mass; With the view of winning at any cost; Because of the high bonuses. Because of doping, many athletes suffer from dangerous illnesses, their bodily and psychological health has declined. Some athletes died from doping use. Many meetings of the directors of the Olympic Committees of the countries, the leaders of the International Sports Confederation have discussed and proposed immediate, special steps to check and have religious sanctions. With athletes using catalysts, to protect the cleanliness of the Olympic Charter, to protect the lofty purposes of sport. The International Olympic Committee's Sports Medicine Council has tried to come up with a detail of banned drugs. Doping test analysis is time-consuming and costly, requires modern scientific equipment and a range of doping compounds. Therefore, it is required that the detailed chemistry industry must develop precise analytical techniques with sound sense, great selectivity, and low detection limits to identify organic compounds and doping compounds in specific. Many multi-functional analysis techniques were introduced and used, such as atomic absorption spectroscopy (UV-Vis) analysis, high-performance liquid chromatography (HPLC), mass spectrometry (GC-MS), and electrochemical analysis. However, the UV-Vis, HPLC, and GC-MS methods reveal many limitations, the very high cost of material and analysis, while the electrochemical analysis approach is common. Dissolved von-amperometric (SV) methods offer many improvements such as high sensitivity, accuracy, selectivity, and low detection limit, low cost of equipment, and analysis. and therefore, well suited for the direct analysis of some organic compounds. Stemming from the above problems shows that the decision of organic compounds by SV method using ERGO changed electrodes is friendly and is a new research direction in electrical analysis. domestic and in the world. At

the same time, it is useful in workshops in Vietnam equipped with multifunctional electrochemical analyzers. That is the reason to choose the topic: **"Research and analyze some doping compounds in sports by electrochemical methods"**.

In the analysis process, we use the following groups of research approaches: Methods of analysis and document synthesis; Chemical analysis method; statistical mathematical method.

Use of chemicals and material in the analysis process: The chemicals used in research are simple chemicals (PA): graphite, boric acid, acetic acid, phosphoric acid, disodium hydrophosphate, mononatri orthophosphate, anbolic(AN), furosemide (FU) and Methandienone (ME).

The equipment used is: Electrochemical analyzer CPA - HH5; Glassy carbon electrodes and electrolysis vessels; Precisa XB 220A analyties, Switzerland; Aquatron double distillation machine (Bibby Sterilin, UK); MicropipetLabpette types: of Labnet, USA; Magnetic stirrer VelpScientifica; Universal Centrifuge 320R; Cole - Parmer 8890 ultrasound machine.

Research Results:

1. Selection of the working electrode

Electrochemical properties of anbolic (AN), furosemide (FU), and Methandienone (ME)

The dissolving ring von-ampe (CV) system was used to study the electrochemical properties of three analytes, anbolic (AN), furosemide (FU), and Methandienone (ME) on ERGO / GCE electrodes. The dissolving sugar results shown in Figure 1 show that anbolic (AN) and furosemide (FU) are inevitable, methandienone (ME) is the reversible pseudo-agent.

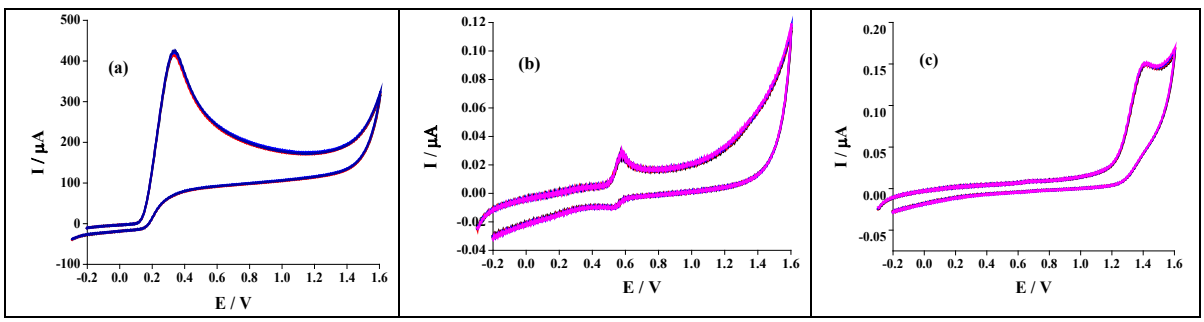

Figure 1. CV curves of AN (a), FU (b), and ME (c) with combinations of 10-2, 10-4, and 10-3 M in a B-RBS buffer of 0.2 M used ERGO/GCE electrodes (with a GO amount of 5 µg, the number of contraction rings is 5).

The CV method, ERGO / GCE electrodes gave the dissolved peak current signals of all three analytes; however, only two peaks of anbolic (AN) and furosemide (FU) appear in the GCE and GO / GCE electrodes, which shows that reduced graphene oxide has a principal advantage over graphene oxide when applied. anbolic (AN), furosemide (FU), and Methandienone (ME). Therefore, ERGO / GCE electrodes exhibiting superiority over GCE and GO / GCE electrodes should be selected for more research.

2. Optimize experimental conditions

In the ASV method, a mixture of dissolving voltmeter signal recording systems can be used such as linear potential scan von-ampe technique (LS), various pulse voltammetry (DP) technique, and square wave von-ampe (SW), ... In these approaches, two techniques DP and SW are used popularly . Therefore, in this study, the anodic dissolved square wave voltmeter technique (DP-ASV) was chosen to investigate analyte systems including AN (5.10-5 M), FU (5.10-6 M). and ME (5.10-5 M) in buffer Britton-Robinson 0.1 M (pH = 3).

2.1. Investigate enrichment capacity

When choosing the enrichment capacity (Eacc), the enrichment potential should be chosen to ensure that it enriches only the analyte on the electrode surface, minimizing enrichment or other electrode reactions that affect the electrode. affects the sense and accuracy of the test. The enrichment potential needs to be more negative or equal to the depolarization potential of the materials to be determined to reduce them on the electrode surface. Thus, to investigate the effect of the enrichment potential on the analytic process, the experiment was conducted at different enrichment potentials (from -0.2V to 0.3V). Record dissolved current by DP-ASV method, potential scanning range from -0.2V to +1.6 V. The results are shown in figure 2.

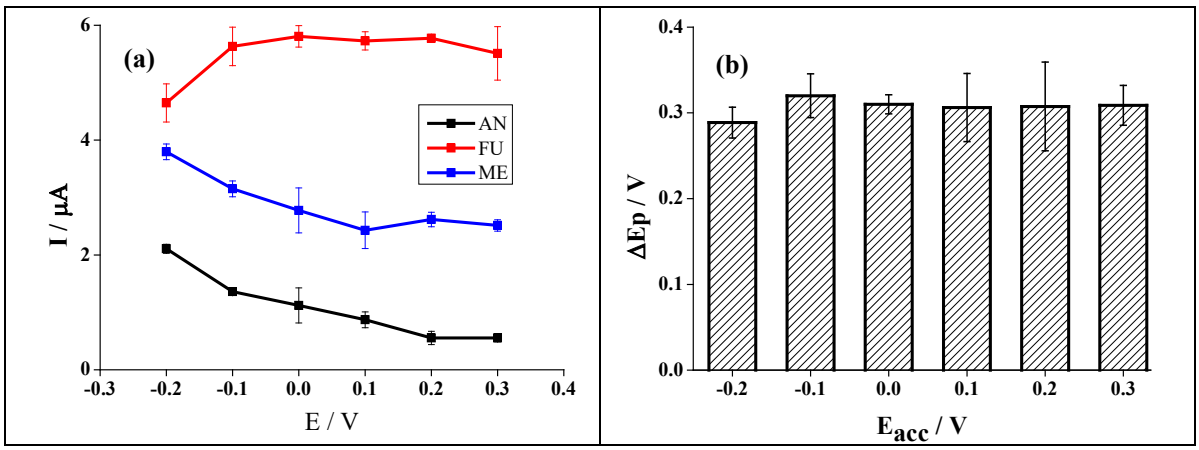

Figure 2. The fluctuation of Ip (a) and probable distance of vertices AN and FU (b) in other forms of getting rich.

From the results in Figure 2, it shows that: Eacc = –0.1 V, the peak separation capability is the best, and the failure of the signal Ip corresponds to the small analyte item. Therefore, the enrichment capacity of –0.1 V is chosen for the next course.

2.2. The enrichment time survey

The enrichment time has an important effect on the termination signal of the analyte. When the enrichment time increases, the dissolving signal rises, at the time of large enhancement, it saturates the electrode surface with the analyte, the termination signal rises. Therefore, the analysis of the enrichment time aims to choose the time at which the required return is the high dissolution signal, but the analysis time is not too much. To conduct the enrichment time analysis, we proceed: record the dissolved voltages of the analyzes at different enrichment times (0, 15, 30, 45, 60, 75, 90 s). We show the results in figure 3.

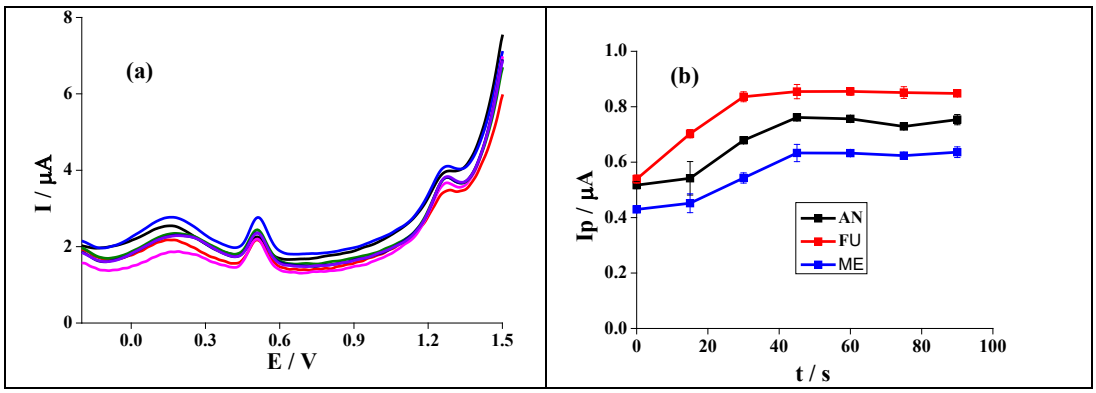

Figure 3. Curves DP-ASV (a) and curves showing variations of IP (b) with other enrichment times. We measured values, CAN = 5.10-5 M, CFU = 5.10-6 M, CME = 5.10-5 M in buffer B-RBS 0.2 M (pH = 3).

From the results of Figure 3 shows: When the enrichment time extends from 0 s to 45 s, the peak current intensity increments. Continuing to increase the enrichment time, the dissolution peak current is almost constant. Therefore, to save 45 s of analysis time, it was selected for the next course.

2.3. Investigate the effect of vibration amplitude

The vibration amplitude has an important effect on the termination signal of the analyte. If the vibration amplitude is small, the dissolved peak current will be low, the amplitude of the vibration is large, the dissolved peak current is high, but when the amplitude of the vibration is large, the climax is expanding, increasing the effect of other factors on the analyte. Therefore, choosing the vibration amplitude will determine the analytical capacity of the approach. Because of this, we investigated the vibration amplitude by recording the dissolving peak floods of the tests at different vibration amplitudes. We show the results in Table 1.

Table 1. Influence of vibration amplitude on the discharged current signal according to DP-ASV method

Vibration Amplitude ΔE (V)	AN		FU		ME	
	Ip.TB (µA)	RSD (%)	Ip.TB (µA)	RSD (%)	Ip.TB (µA)	RSD (%)
0,04	0,598	2,49	1,247	3,47	1,202	2,90
0,05	0,726	1,94	1,349	0,80	1,140	1,45
0,06	0,887	0,61	1,613	0,40	1,356	0,37
0,07	1,002	0,93	1,821	1,44	1,602	0,41
0,08	1,119	0,98	1,962	1,15	1,838	0,27
0,09	1,231	0,65	2,058	1,56	2,061	1,32
0,10	1,326	1,18	2,069	1,06	2,115	1,30

From the results in Table 1 shows, when the vibration amplitude is 0.05 and 0.06 V, the peak separation capacity is best, however, the failure is shorter at 0.06 V pulse amplitude. Therefore, a pulse amplitude of 0.06 V (60 mV) is chosen for more research.

2.4. Effects of scanning speed

In the dissolved volt-ampere method, the potential scanning rate has a significant effect on the dispersed signal of the analyte. If the scanning velocity is fast, it shortens the test stage, the dissolved signal is high, but the rate of the dissolved signal is reduced or loss of dissolved signals may occur. Conversely, when the potential scanning rate is slow, the measurement repeatability is high, the resulting dissolved signal has a proportional shape, but the dissolved signal is low. Therefore, an appropriate rate of potential sweep must be chosen to reduce the recording time while ensuring measurement accuracy and smoothness and symmetry of the von-ampe curve.

To conduct the scan speed survey, we recorded dissolved voltages of three analyses simultaneously AN, FU, and ME at different scanning speeds: 5, 10, 15, 20, 25, 30. mVs-1. It shows the scanning speed survey results in Figure 4.

From the results of Figure 4, it shows that when the scanning rate is 20 mV.s-1, the dissolving signal of AN and FU is highest (compared with the survey area) and RSD in repeated measurements of the fertilizers. small area. Therefore, a scanning speed of 20 mV / s is chosen for the next study.

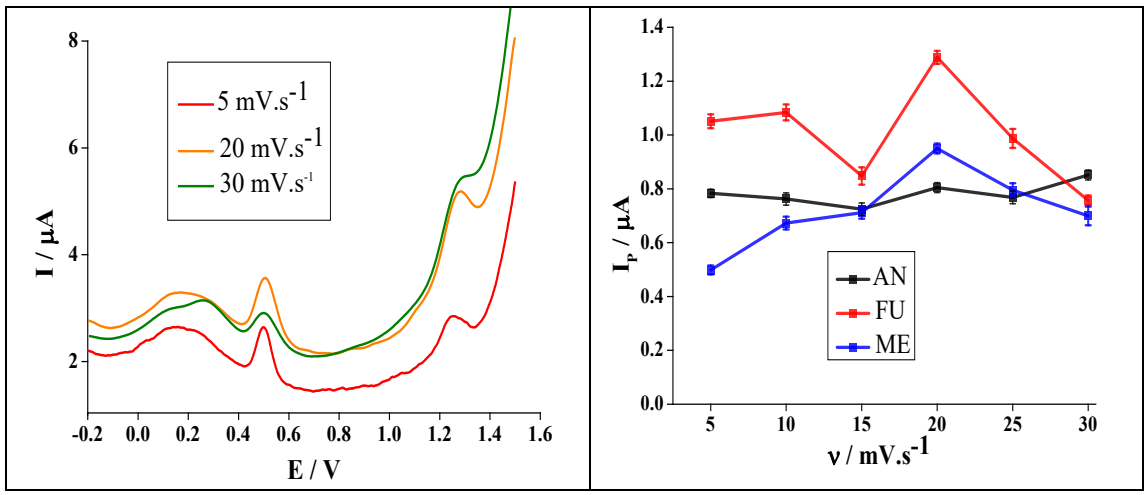

Figure 4. DP-ASV curves (a) and groups representing IP (b) changes at various scanning speeds. Values were calculated, CAN = 5.10-5 M, CFU = 5.10-6 M, CME = 5.10-5 M in buffer B-RBS 0.2 M (pH = 3).

3. Test the reliability of the method

To apply the ERGO / GCE changed electrode to the test of actual samples, the accuracy of the system must be assessed early. The numerical quantities used for assessment include repeatability, diameter range, subtlety, LOD, LOQ.

3.1. Test the signal repeatability

Ip repeatability on the ERGO / GCE electrode is measured by relative standard variation (RSD). To determine the repeatability of Ip, we performed repeat measurements 6 times with 3 different combinations. We show the results in Table 2 and Figure 5.

Based on the results in Table 2 and Figure 5, we can assume that the repeatability of IP for the three substances AN, FU, and ME is very valuable, ranging from 0.76% to 3.03%. When measuring the RSD in the experiments with ½RSDH at the respective concentrations were smaller and thus, the repeatability of the IP in the DP-ASV method using ERGO / GCE changed electrodes was fully fair.

Table 2. Ip, TB, SD, RSD values when renewed at 3 different combinations corresponding to the DP-ASV method

	C (M)	$I_{p,TB}$ (µA)[(b)]	SD	RSD, (%)	½.RSD_H (%)
TN 1[(a)]	$C_{AN}=10^{-2}$	117,2	0,89	0,76	2,00
	$C_{FU}=10^{-4}$	74,48	0,75	1,00	4,00
	$C_{ME}=10^{-3}$	48,32	0,88	1,83	2,83
TN 2	$C_{AN}=5.10^{-3}$	21,92	0,53	2,01	2,22
	$C_{FU}=5.10^{-5}$	17,03	0,87	2,14	4,44
	$C_{ME}=5.10^{-4}$	12,00	0,52	2,35	3,14
TN 3	$C_{AN}=10^{-3}$	76,85	0,98	1,28	2,83
	$C_{FU}=10^{-5}$	51,92	1,57	3,03	5,66
	$C_{ME}=10^{-4}$	32,03	0,35	1,08	4,00

Average IP value after those 6 repeats; B-RBS buffer 0.2 M (pH = 3).

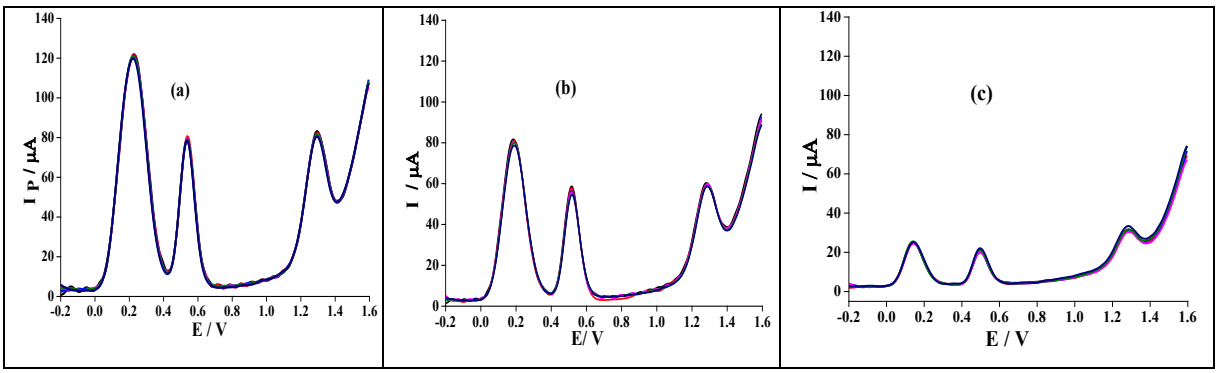

Figure 5. DP-ASV curves at three concentrations AN, FU, and ME with three model experiments (TN1, TN2, and TN3).

Thus, if the repeatability of the dissolved RSD signal (%) <1/2 RSDH, then it can be considered that the repeatability of the analysis results is good.

3.2. Linear range

Results of the decision of the linear dimension of the DP-ASV method using changed ERGO / GCE electrodes for AN, FU and it presents me in Figure 6.

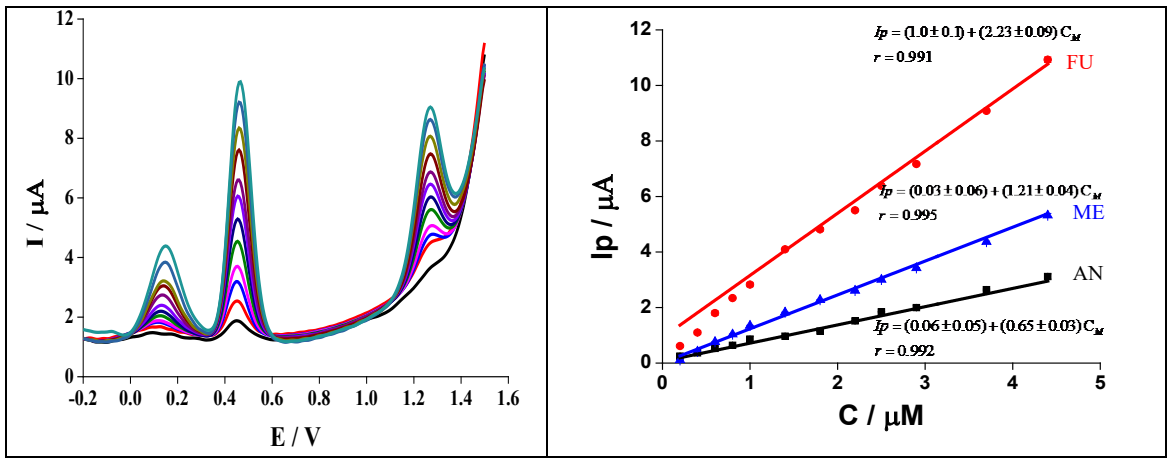

Figure 6. DP-ASV curves of AN, FU, and ME at various co-standard additive concentrations (A), Linear regression curves representing the relation between IP and accumulations of AN, FU, and ME (B).

When conducting a further standard examination at the same time AN, FU, and ME found that for each item there is only a defined linear range (Figure 6) with large correlation coefficients. We define the linear regression equations as follows:

AN: IP (A) = (0,06 ± 0,05) + (0,65 ± 0,03)CAN r = 0,999
FU: IP (A) = (1,0 ± 0,1) + (2,23 ± 0,09)CFU r = 0,994
ME: IP (A) = (0,03 ± 0,06) + (1,21 ± 0,04)CME r = 0,995

In figure 6, it shows that AN, FU, and ME can be determined in the survey sample.

3.3. Detection limit and sensitivity

Derived from the result of the linear range analysis, we depend on the detection limit through the formula 3Sy / x / b where Sy / x is the measured variance of the measure and b is the slope of the regression equation. AN: 0.36 µM and limit quantification from 1.07 to 1.42 µM; FU: 0.25 µM and differ from 0.75 to 1.00 µM; ME: 0.23 µM and limit quantification from 0.70 to 0.93 µM.

Conclude:

The anodic dissolve square wave voltmeter (DP-ASV) approach is used to examine the causes that affect (such as enhancement, enrichment time, pulse amplitude, and potential sweep rate) on the signal of anabolic (AN), furosemide (FU), and Methandienone (ME). GCE changed electrodes by reducing (electrochemical reduction) graphene. The results showed that the denaturing electrode provided the termination signal of all three tests with An value: 0.36 µM and a significant limit of 1.07 to 1.42 µM; FU: 0.25 µM and differ from 0.75 to 1.00 µM; ME: 0.23 µM and limit quantification from 0.70 to 0.93 µM.

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Improving the Legal Basis for Controlling State Power in Vietnam to Meet the Demand of Building the Rule of Law State

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Abstract:

The Constitution of the Socialist Republic of Vietnam of 2013 and the laws on organization and operation of the state apparatus have institutionalized the principle "The State power is unified and delegated to state bodies, which shall coordinate with and control one another in the exercise of the legislative, executive and judiciary powers", which is recognized in the Platform for National Construction during the Transitional Period towards Socialism of the Communist Party of Vietnam, thus creating necessary legal basis for controlling state power in a socialist rule of law state. After five years implementing the Constitution (2014-2019), the results of controlling state power have been positive, promoting and ensuring socialist rule of law in the organization and operation of state bodies and guaranteeing human rights and citizens' rights. However, due to the lack of legal provisions on controlling state power, while the current laws are not harmonious and systematic, the effectiveness of controlling state power is limited. The authors propose some solutions to improve the legal basis for controlling state power to be more substantive and effective, meeting the demand of building a rule of law state.

Keywords: Control of state power, legislative, executive, judicial

1. Current law on controlling state power in Vietnam

The Constitution of the Socialist Republic of Vietnam of 2013 states that the State of the Socialist Republic of Vietnam is a socialist rule of law state of the People, by the People and for the People. All the state power belongs to the People. The State power is unified and delegated to state bodies, which shall coordinate with and control one another in the exercise of the legislative, executive and judiciary powers.

The issue of controlling state power in Vietnam was first studied by scholars in the late 20th century and was stated in the Platform for National Construction during the Transitional Period towards Socialism (supplemented and developed in 2011) of the Communist Party of Vietnam and was institutionalized in the Constitution and the laws on organization and operation of the state apparatus.

Controlling state power originates from the fundamental principle of the Constitution that "All state power belongs to the People". State power is not the inherent power of the State; after all, it is the People's power. History has proved that when the people delegate power to the State, such power has the tendency to self-negate, corrupt and contrast with itself. It is, therefore, essential to establish a mechanism from which the abuse of power and violation of laws of state bodies and staff can be prevented and eliminated, thereby ensuring the sound and effective exercise of power.

Controlling state power varies country by country due to historical, cultural, political, and socio-economic differences. The characteristics of state power control in Vietnam are identified as follows:

First, control of state power reflects the State's subordination to the People – the supreme holder of state power. The State is merely an agent, which is assigned and delegated by the people to exercise state power. Therefore, the State must always be put in a controlled position in relation to the people (all Vietnamese citizens).

Second, control of state power in Vietnam inherits the progressive values of Vietnam's feudalist dynasties with strict rules on controlling power of the King and mandarins at the central and local levels in an absolute monarchy.

They are rules on "Ngu su dai" (Imperial Chamber), a body in the Ly Dynasty (1010-1225) and Tran Dynasty (1225-1400) having the function of preventing the King from making bad decisions and overseeing mandarins; the "Luc khoa" in the Le dynasty (1428-1778), which was appointed by the King to oversee mandarins in the ministries and at the local levels; the "Do sat vien" (Censorate Imperial) in the Nguyen dynasty (1804-1945), which was the supreme supervisory body of the government.

Third, control of state power in Vietnam is now implemented in a political regime which is led by a single party and which ensures the effective division and coordination among legislative, executive and judiciary powers, not counter-balancing or excluding each other, but aiming at making sure the organization and operation of the State comply with the law and function in a smooth way, being able to fight against abuses, arbitrariness and corruption, adhering to the principle that "all state power belong to the people", and not aiming at checking, balancing, or eliminating each other among the three branches of power.

Fourth, control of state power has broad scope and diverse forms, including internal control and control from the society (from outside the State apparatus).

Looking back at the 74-year history of the State of the Socialist Republic of Vietnam (1945-2019), it can be seen that the legal basis for controlling state power in Vietnam was formulated early in the first Constitution of the State of the Democratic Republic of Vietnam (1946), and was gradually developed in the 1959, 1989, and 1992 Constitutions, and particularly upgraded to a high level in the 2013 Constitution and the laws on organization and operation of state bodies, which were enacted after the 2013 Constitution came into force, such as the Law on organization of the National Assembly (2014), Law on organization of the Government (2015), Law on organization of the People's Courts (2014), Law on organization of the People's Procuracies (2014), Law on organization of local governments (2015), Law on oversight activities of the National Assembly and the People's Councils (2015), Law on Vietnam Fatherland Front (2015), and other normative legal documents. Of which, the Constitution is the foundation, setting forth the direction and fundamental principles to ensure that the system of legal provisions on controlling state power are harmonious, consistent, feasible, efficient and effective. The above-mentioned laws stipulate the position, role, function, authority, content, form, and procedure for the competent state bodies to exercise control over the activities of agencies, organizations, and individuals in the state apparatus at central and local levels.

Current forms of controlling state power in Vietnam include:

- Reporting regime of state bodies at all levels;
- Oversight of people-elected bodies;
- Auditing activities of the State Audit;
- Check and inspection activities of state bodies;
- Questioning by the National Assembly and the People's Councils against the executive and judicial bodies; vote of confidence , rating of confidence.
- Supervision of judicial activities by the People's Procuracies.
- Exercise of voting right when the State holds referendum and gather public opinions on draft Constitution.
- Social criticism and social oversight by the Vietnam Fatherland Front and mass organizations.
- Controlled by mass media.

With respect to control of legislative power, according to the Constitution, legislative power is limited by the Law on promulgation of normative legal documents (2015), which strictly and specifically stipulates the authority to issue legal documents of the National Assembly and the Standing Committee of the National Assembly; the authority to control the constitutionality of the process and procedure of promulgating normative legal documents through the review of bills by the Ethnic Council of the National Assembly and the National Assembly's committees; restriction on delegation of legislative power by the National Assembly to the Standing Committee of the National Assembly, the Government, and other state bodies at the central and local levels.

Vote of confidence means that the National Assembly and the People's Councils express their confidence or non-confidence of persons holding positions elected or approved by the National Assembly or the People's Councils; this serves as a basis for relieving from duty or approving the proposal to relieve from duty persons who fail to gain confidence by the National Assembly or the People's Councils.

Rating of confidence means the National Assembly and the People's Councils exercise their authority to oversee and assess the level of confidence in persons holding positions elected or approved by the National Assembly or the People's Councils; this serves as a basis for evaluation of state officials.

The 2013 Constitution states that human rights and citizens' right can only be limited by the provisions of a statute in case of necessity for reasons of national defense, national security, social order and safety, social morality and community well-being. As such, the National Assembly cannot delegate to other state bodies (the Government, local governments, the President, the Supreme People's Court, the Supreme People's Procuracy) the power of making laws that limit human rights and citizens' rights.

With respect to control of executive power, we think the focus of controlling state power is control of executive bodies because among the three components of state power, namely, legislative, executive and judicial, the executive best represents the nature of the state. According to the Constitution, control of executive power is exercised in two aspects: 1) the legality in the organization and operation of executive bodies in terms of making and implementing public policies; 2) the promulgation of normative legal documents by executive

bodies. The above provisions define the authority of the National Assembly and the Standing Committee of the National Assembly in overseeing activities of the Government and local government, in particular, the National Assembly exercises the supreme oversight power over the compliance with the Constitution, laws and resolutions of the National Assembly. The Constitution also stipulates the oversight power of the President over the Government.

Control of executive power by the judicial bodies is exercised through the adjudication of administrative court, which is a division in the people's court system. Administrative courts have the jurisdiction to decide on the legality of administrative decisions and administrative acts in performing the state management function by state bodies and public servants.

The National Assembly exercises the power of supreme oversight over the observance of the Constitution, laws and resolutions of the National Assembly; reviews work reports of the Government; regulates the organization and operation of the Government; elects, relieves from duty or removes from office the Prime Minister; approves proposals on the appointment, relief from duty or dismissal of the Deputy Prime Ministers, Ministers or other members of the Government; conducts votes of confidence on persons holding positions elected or approved by the National Assembly; annuls documents of the Government and the Prime Minister that contravene the Constitution, laws or resolutions of the National Assembly.

The Standing Committee of the National Assembly oversees the activities of the Government; suspends the implementation of documents of the Government and the Prime Minister that contravene the Constitution, or laws or resolutions of the National Assembly, and refers those documents to the National Assembly to decide on their annulment at the next session; annuls documents of the Government and the Prime Minister that contravene ordinances or resolutions of the Standing Committee of the National Assembly; supervises and guides the work of the People's Councils; annuls resolutions of the People's Councils of provinces or centrally run cities that contravene the Constitution, laws or documents of state agencies at higher levels; dissolves the People's Councils of provinces or centrally run cities in case they cause serious damage to the interests of the People

The President has the power to propose to the National Assembly to elect, relieve from duty or remove from office the Prime Minister; and, based on resolutions of the National Assembly, to appoint, relieve from duty or dismiss Deputy Prime Ministers, Ministers or other members of the Government. The President may request the Government to meet to discuss issues that he or she considers necessary to fulfill his or her tasks or exercise his or her powers.

With respect to control of judicial power, the Constitution and laws clearly define the role of the National Assembly, the People's Councils, and the President.

The Constitution and laws expressly state the role of the National Assembly, the People's Councils, and the President in controlling judicial power through the oversight activities of the National Assembly and the People's Councils, through the President's power to propose to the National Assembly to elect, relieve from duty or remove from office the Chief Justice of the Supreme People's Court or Procurator General of the Supreme People's Procuracy and power to appoint, relieve from duty or dismiss Judges of courts at all levels and Procurators of the Supreme People's Procuracy. Activities of the investigation agencies, judgment enforcement agencies, and other agencies assigned the task of performing certain investigation activities (Forest ranger, Customs, Border protection, Fisheries resources surveilances, etc.) are also subject to the supervision of the People's Procuracies.

The internal control of each branch of power is specified in the laws through the inspection, supervision, and checking activities within each body of the state apparatus (Government Inspectorate, Specialized Inspectorate).

External mechanisms for controlling state power are formed and operate based on the Constitution and laws. They are the checking and supervision of the Communist Party, which is considered a form of political and social check and supervision because the objects of checking and supervision are activities of party organizations and conducts of party members who are public servants in the state apparatus. Furthermore, social oversight is conducted by the Vietnam Fatherland Front, mass organizations, the mass media, and democratic institutions at the grassroot level. The Vietnam Fatherland Front is a political alliance and voluntary union of the political organization, socio-political organizations, social organizations and prominent individuals representing their class, social stratum, ethnicity or religion and overseas Vietnamese, having the function of conducting social oversight and criticism, directly monitoring, considering, assessing and making proposals on the operation of agencies, organizations, popularly elected deputies, officials, civil servants and public employees in the implementation of policies and laws.

The characteristics of social oversight are high independence and transparency. Because social oversight does not depend on state bodies with respect to organization, personnel and procedure, it can ensure independence, and it is more diverse and flexible than checking and supervision by the State. The legal consequences of the people's oversight are not direct sanctions; instead, they are recommendations and proposals to competent Party institutions and state bodies. However, social oversight is effective because it is guaranteed by the power of public opinions and the transparency of the process.

In practice, control of state power in recent years has shown positive results and has been able to prevent violations of laws, abuse of power and corruption by state bodies and civil servants, making the public administration healthier. All agencies and institutions in the state apparatus follow the principle of self-check, and to some extent, are subject to other agencies' checks as an objective checking mechanism to ensure division and coordination in implementing authorities, functions and tasks. Supervision and check by one component upon another in the state apparatus create an objective prevention mechanism, which helps prevent subjective overreaching of authority and abuse of power that lead to violations of the Constitution and law and infringements upon citizens' legitimate rights and interests. The Party's checking and supervision work has achieved important results, contributing to the prevention against degradation in political thoughts, morality, lifestyle, and the fight against corruption, thus enhancing the Party's capacity, reinforcing confidence of officials, party members and the people. Social oversight has seen positive changes, being able to mobilize the people's strength, checking and overseeing activities of state bodies and civil servants through direct democracy, and discovering civil servants who violate laws and public service ethics and referring to competent agencies for imposing disciplines.

2. Limitations of the laws on controlling state power and solutions

Although current laws on controlling state power in Vietnam have made some positive impacts in practice, they still contain many limitations that need to be addressed:

(a) The law has not set out clear, harmonious, and effective provisions on the mechanism of division, coordination, and control of state power at different levels. The organization and operating mechanism of fundamental institutions in the socialist rule

of law state such as the National Assembly, the President, the Government, and the judicial system still contain some flaws, making them less efficient and effective. Overlap and confusion as to functions and tasks of such institutions have not been addressed, which undermines the unity of state power and the efficiency of State operation. In general, the mechanism of controlling power is not very effective with limited transparency and accountability.

(b) The laws governing the mechanism of constitutional protection do not assign the task of protecting the Constitution to a specialized body, but to different bodies such as the National Assembly, the Government, the People's Courts, the People's Procuracies, other agencies and citizens. The procedure for protecting the Constitution has not been specified. Article 119 of the 2013 Constitution merely states in general that: "The mechanism for constitutional protection shall be prescribed by a law".

(c) Current laws provide that the National Assembly shall control its legislative activities by itself but have not specified the process and procedure for the National Assembly to review the constitutionality of its laws. The Constitution and other laws do not state that the National Assembly has the power to annul laws which allegedly contravene the Constitution. The National Assembly only has the power to annul documents promulgated by the Standing Committee of the National Assembly, the President, the Prime Minister, the People's Courts, the People's Procuracies, and other agencies established by the National Assembly.

(d) Current laws provide that the President has only limited authority to control legislative power because the President cannot postpone the announcement of laws; he only can only make proposal to the National Assembly to review the ordinances promulgated by the Standing Committee of the National Assembly.

(e) Current laws do not specify the Government's control over the National Assembly. The Government is the executive organ of the National Assembly but it is also the highest state administrative organ; however, this has not been reflected in the laws governing control by the executive over the legislative.

(f) The People's Courts currently are controlling the executive power through their adjudication of administrative cases. However, there has been no mechanism for the courts to control legislative activities.

(g) Current laws provide that the People's Procuracies supervise the courts' adjudication of cases, which contradicts the Constitution's principle that Judges and Assessors are independent and follow only the law.

(h) The courts in Vietnam are structured in four levels: the Supreme People's Court, which includes from 15 to 17 justices and perform the functions of reviewing lower courts' decisions according to cassation or reopening procedure and issuing precedents; the high people's courts, which perform the functions of adjudicating cases at the appellate level and reviewing lower courts' decisions according to cassation or reopening procedure; the provincial courts, which performs the function of adjudicating cases at the first instance level and appellate level; and the district courts, which only try cases at the first instance level. In addition, there are military courts. Although the courts exercise judicial power, they are organized as a vertical system and managed by the Supreme People's Court. The Law on organization of People's Courts (2014) stipulates that the management of People's Courts and military courts must guarantee the independence among courts; however, the vertical structure

of the court system currently is similar to that of the executive body, which is not suitable for the organization and management of the judiciary.

(i) The mechanism for controlling state power at local levels among the people-elected bodies, state management agencies, people's courts, and people's procuracies has not been specified in the laws.

(j) Social oversight and social criticism by the Vietnam Fatherland Front and mass organizations are not very effective and not substantive.

Based on the abovementioned analysis, we propose the following solutions to improve the legal basis and enhance efficiency of controlling state power in Vietnam in order to meet the demand of building the socialist rule of law state:

First, the laws should clarify the mechanism for controlling state power among state bodies in exercising legislative, executive, and judicial power and should have detailed provisions on coordination in exercising and controlling the three powers at all levels of government.

Second, the laws should specify Article 119 of the 2013 Constitution on building a mechanism for constitutional protection towards establishing a Constitutional Court or a Constitutional Supervision Committee. The President should have the authority to request the National Assembly to review a law when such law appears to violate the Constitution. There should be more specific provisions on control by the executive over the legislative and the judiciary.

Third, current control by the judiciary over the executive (reviewing the legality of administrative decisions and administrative acts, ordering executive bodies to compensate injured parties, requesting competent agencies and individuals to consider, amend, supplement, or annual normative legal documents, nullify executive bodies' decisions while adjudicating civil cases) is still in narrow scope, which has not brought into full play the role of the courts. To ensure that the judiciary exercises better control over the executive, it is necessary to give administrative divisions of the provincial court the jurisdiction to review the constitutionality and legality of documents issued by the People's Councils (resolutions) and People's Committee (decisions and directives).

Fourth, in the long-term, the People's Procuracies' power to supervise the courts' adjudication work should be revoked to guarantee the constitutionally-recognized principle of independence of Judges and Assessors.

Fifth, for the courts, it is necessary to create a state body to manage the courts with respect to organization, which is independent from the Supreme People's Court. Such body may be a national judicial council, which is often chaired by the President, as seen in many countries.

Lastly, with respect to social oversight, it is essential to enhance the role and responsibility of social organizations in overseeing state bodies' activities, guaranteeing the substantive effectiveness of social oversight and social criticism by the Fatherland Front and mass organizations.

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Effect of Naturopathy Treatment on Polycystic Ovarian Disease in Middle Aged Women

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Introduction:

Polycystic ovarian disease (PCOD) is one of the most common endocrinal disorders among women, affecting 5-10% of women at their reproductive age (Franks, 1995). The disease was first defined in 1935 by Stein and Leventhal based on the observation of a set of symptoms such as amenorrhea, hirsutism and obesity in women whose ovaries were enlarged and contained multiple follicular cysts. It is a disorder in which women do not experience normal release of eggs from the ovaries (ovulation). They have an abnormal production of male hormones and their body is resistant to the effects of the hormone insulin. It is an exceedingly prevalent metabolic disorder and possibly constitutes the most frequently encountered endocrinopathy to affect women. There is considerable heterogeneity of symptoms and signs among women with PCOD, and for an individual these may change over time. Key features include menstrual cycle disturbance, hyperandrogenism (hirsutism, acne and elevated serum testosterone concentration), and obesity. Patients suffering from polycystic ovarian disease (PCOD) have multiple small cysts in their ovaries (the word poly means many). These cysts occur when the regular changes of a normal menstrual cycle are disrupted. The ovary is enlarged; and produces excessive amounts of androgen and estrogenic hormones. Due to its heterogeneous nature both in clinical presentation and laboratory manifestations the definition of the disease has been much debated. At present most accepted Rotterdam polycystic ovary disease diagnostic criteria for the diagnosis of PCOD states 2 of the following 3 features needs to be present to make the diagnosis and to establish diagnosis it is important to exclude other etiologies with similar clinical presentation (congenital adrenal hyperplasia, androgen-secreting tumors, Cushing's disease. There are various factors that results in Polycystic Ovary Syndrome. The etiology of the disease is multifactorial and involves interactions between "nature" and "nurture." Major factors are wrong eating habits, bad lifestyle, any medication taken for specific disease for a long time, high level of triglycerides, hormonal imbalance, Obesity etc. Although there are studies which have shown the beneficial effects of various methods or treatments in many of the associated conditions of PCOD, to the best of our knowledge, there are no published studies on naturopathy as a treatment for PCOD to-date. Hence the present study has been planned to study effect of naturopathy treatment on polycystic Ovarian disease in middle aged women.

Methodology:

A totalof 100 middle aged women were selected as subjects who are suffering from PCOD. The selected subjects were in the age group 28-35 years. Each subject selected underwent naturopathy treatment for 12 weeks.

Training Protocol: The following items were included in the treatment:

- **Mud Pack (30 mins) :** A mud pack on abdomen was given everyday so as to extract heat out of the body and to stimulate the functioning of all the organs.

- **Enema :** Enema with warm water for 1st 3 weeks and then with lemon water for next 1 week was given to clear the bowels
- **Vaginal Douche :** Vaginal Douche was given to all subjects with neem or methi seeds decoction in warm water for 11 weeks (5 days in a week), in order to overcome inflammation in cervix.
- **Hot and Cold Hip Baths :** Patient was advised to sit in two tubs alternately in ratio 3mins:1min starting with hot water and ending with cold water for 12 weeks. Patient is advised to drink water and keep a cold wet towel on head and sit in hot water (40-42 degree celcius) for 3 mins. Then a tub with cold water (30-32 degree celcius) is kept aside it. Patient is made to sit in this water for 1 min. This process continues three times and we make sure that temp of water is maintained by keeping a thermometer in it with a presence of attendant.
- Once it was over, a Stomach wrap was tied on the stomach for 40 mins.
- **Diet Changes :** Bananas contain low sodium and high amount of potassium and magnesium. They are good for patients of PCOD.

Treatment from 1st Week to 4th Week:

- **6:00 am :** 1/2 cup fresh apple juice with small amount of ginger juice
- **6:30 am :** 1 glass lemon honey water (lukewarm water)
- **7:am to 8:30 am :** Naturopathy Therapies
- **Breakfast (9:00 am) :** 5 almonds (soaked overnight), 7 raisins + Sprouts (sprinkled with coriander, cucumber, onion / Vegetable porridge
- **11:30 am :** Fruits / Coconut water
- **Lunch (1:00 pm to 2:00 pm) :** Chapati – Curry / pulses – Curd / buttermilk + Plate full of salad
- **5:00 pm :** Vegetable juice (Specifically bottle guard) / Herbal tea
- **Dinnner :** Curry or Soup (coloured vegetables)
- Take a glass of lemon honey water before going to bed.

Treatment from 5th Week to 8th Week:

- **6:00 am :** 2 spoons wheatgrass juice with water
- **6:30 am :** ½ spoon flexseeds with water
- **7:am to 8:30 am :** Naturopathy Therapies
- **Breakfast (9:00 am) :** 5 almonds (soaked overnight), 7 raisins + Sprouts (sprinkled with coriander, cucumber, onion / Vegetable porridge
- **11:30 am :** Fruits / Coconut water
- **Lunch (1:00 pm to 2:00 pm) :** Chapati – Curry / pulses – Curd / buttermilk + Plate full of salad
- **5:00 pm :** Vegetable juice (Specifically bottle guard) / Herbal tea
- **Dinnner :** Sauteed Vegetables (Multicoloured)
- Take a ½ cup chena water before going to bed.

Treatment on 8th Week: Body Detoxification Diet:

- **Monday :** Seasonal Fruits/ Buttermilk/ Nuts/ Salads/ Soups
- **Tuesday :** Only seasonal fruits
- **Wednesday :** Only seasonal fruits
- **Thursday :** Only Fresh fruit or vegetable juices
- **Friday :** Only Fresh fruit or vegetable juices
- **Saturday :** Only seasonal fruits
- **Sunday :** Only Seasonal Fruits/ Buttermilk/ Nuts/ Salads/ Soups nly seasonal fruits

Treatment from 9th Week to 12th Week

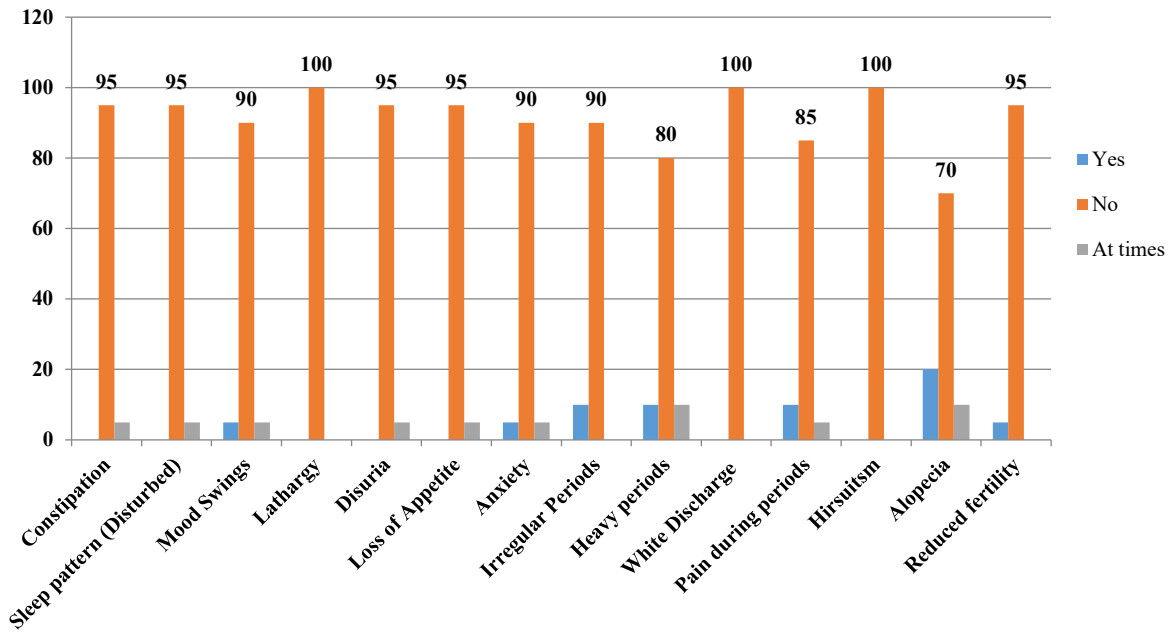
- **6:00 am :** 2 spoons wheatgrass juice with water
- **6:30 am :** ½ spoon flexseeds with water
- **7:00 am to 8:30 am :** Naturopathy Therapies
- **Breakfast (9:00 am) :** Any 4 type of fruits
- **11:30 am :** Fruit juice/ Vegetable juice / Coconut water
- **Lunch (1:00 pm to 2:00 pm) :** Chapati – Curry / pulses – Curd / buttermilk + Plate full of salad
- **5:00 pm :** Vegetable juice (Specifically bottle guard) / Herbal tea
- **Dinner :** Sauteed Vegetables (Multi-coloured)
- Take 3 spoons amla juice and 3 spoons aloe-vera juice with 6 spoons honey.

Some Important Instructions to the subjects

Follow	Avoid
• Chew well and eat with a peaceful mind. • Drink at least three litres of water in a day, (300 ml. at 2 hours gap). • Practice exercise in any form. • Fasting one day in a week with only liquids – seasonal fruits and vegetable juices 4 to 6 glasses in a day or with water only.	• Coffee, tea, smoking, tobacco chewing, pan masala, jarda, alcohol, soda etc. • Non vegetarian food, eggs. • Frozen / processed / fast / preserved / refined / coloured / flavoured / Bottled aerated drinks. • White flour (Maida), White sugar etc. • Tea, rice and fried food. • Overeating / untimely eating. • Avoid indulgence in all unnatural physical / psychological habits.

This process goes for 12 weeks and following are the observations that can be seen.

Results & Discussion:



The result of the study clearly revealed that the subjects after going 12 weeks of naturopathy treatment have recovered from the PCOD as 100% of the subjects have said that they don't feel lethargic, do not have white vaginal discharge and do not have complaints of Hirsuitsm after the naturopathy treatment. It was also found that 95% of the subjects have recovered from the problems of constipation, disturbed sleep pattern, Disuria, Loss of Appetite and fertility; 90% of the subjects said they don't feel mood swings, they don't have irregular periods and they don't have anxiety related problem now; 85% of the subjects do not feel pain during periods; 80% of the subjects have recovered from problems of heavy periods and 70% of the subjects have recovered from alopecia.

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Effect of 12 Weeks Naturopathy Treatment on Diabetes Mellitus Patients

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Abstract:

The study was conducted to determine the effectof 12 weeks naturopathy treatment on diabetes mellitus patients. For the purpose of the study 30 middle aged (ag range 40-45 yrs) diabetic mellitus patients were purposely selected from Ojas Nature Cure Centre, NKS Hospital, GulabiBagh, Delhi. The selected patients underwent 12 weeks naturopathy treatment. Glycated Hemoglobin (HbA1C), Fasting Blood Glucose Level (FBS), Post Prandial Glucose Level (PBS), High Density Lipoproteins Cholesterol (HDL) and Low Density Lipoproteins Cholesterol (LDL)were measuredthrough blood test before and after 12 weeks naturopathy treatment. The findings of the study revealed a significant improvement among the diabetes mellitus patients as the Glycated Hemoglobin (HbA1C) was improved by 29.79%, Fasting Blood Glucose Level (FBS) was improved by 50.69%, Post Prandial Glucose Level (PBS) was improved by 61.48%, High Density Lipoproteins Cholesterol (HDL)was improved by 24.40% and Low Density Lipoproteins Cholesterol (LDL)was improved by 23.42%. These improvements in the selected variables were found significant as the paired 't' values obtained were 31.93, 85.77, 114.18, 11.83 & 35.83at $p \leq 0.05$.It may be concluded that naturopathy treatment can be used as one of the treatment method to reduce diabetes mellitus among the middle aged men.

Keywords: Glycated Hemoglobin, Fasting Blood Glucose, Post Prandial Glucose, High Density Lipoproteins Cholesterol and Low Density Lipoproteins Cholesterol.

Introduction:

Health is "a state of complete physical, mental, and social well-being and not merely the absence of disease" (WHO, 1948). Health is achieved through a combination of physical, mental, emotional, and social well being, which, together is commonly referred to as the Health Triangle.The term Health, has been derived from word "hoelth" means sound and "hale" means strength. Consequently a person is able to a) Function adequately (can be objectively observed), b) Adapt adequately to the environment and c) Feel well as (subjectively assented) (**Adler, 1999**).

Diabetes is one of the most common non-communicable diseases and one of the most challenging health problems in the twenty-first century. The World Health Organization (WHO) has accredit developmental strategic for interventions. Socio-economic change in society e.g. modernization, including urbanization, westernization of lifestyles, and economic development are transforming the cultural processes uttering to diabetes epidemic. Demographic trends may play a diversifying role (e.g., the increased number of elderly persons), Diabetes is characterized by frequent urination (polyuria), hunger (polyphagia), weight loss, blurred vision, and skin itchiness. Diabetes is associated with long term damage and dysfunction of the beta cells of pancreas, eyes (retinopathy and diabetic cataracts), kidneys (nephropathy), nerves (neuropathy), heart, and blood vessels. Attention must paid to

diabetes because its associated late complications which lead to macro vascular as well as micro vascular complications, drain out the quality of life, along with enormous impact on the economy and productivity of developed and developing nations (**Zimmet, 2001**).Diabetes is often called the silent killer because people who have it are often unaware they are affected. The normal level of blood sugar in a fasting person is between 80-120mg percent. If the fasting level of blood sugar is more than 110mg percent or after meals more than 160mg percent, it is called high blood sugar (Diabetes Mellitus). In diabetic patients, sugar can be detected in the urine also. Patients with diabetes have a higher chance of development of coronary blockages. They also get several other diseases like kidney damages as well as damage to the nerves and eyes (**Imayama, 2011**).

World Health Organization study group on Diabetes Mellitus has recognized two types of diabetes namely Insulin Dependent Diabetes Mellitus (IDDM) and Non Insulin Dependent Diabetes Mellitus (NIDDM). In the recent past, the term Insulin dependent diabetes mellitus (IDDM) has been replaced by Type I diabetic. Type I diabetic patients have 0 cell destruction, which is usually immune mediated the majority of the patient develop absolute insulin deficiency and are ketosis prone. The term non insulin dependent diabetes mellitus (NIDDM) has been replaced by Type II diabetic, which encompasses the most prevalent form of disease. Most patients with type II diabetes 2 mellitus exhibit insulin resistance (IR) and ultimately develop concomitant insulin secretary defect (**Shaw, 1998**).

In the 21st century, diabetes analysts keep on paving the street toward a cure. Today, it is vague what shape the street will take; maybe another sensational revelation like insulin sticks out along the path, or potential specialists should be content with the moderate desire of advancement (**Sately, 2008**).

Insulin resistance is a multifaceted syndrome responsible for the future development of type 2 diabetes, obesity, hypertension, dyslipidemia and atherosclerotic cardiovascular diseases. Insulin resistance present in patients with impaired glucose tolerance and hyperinsulinemia are the two major biochemical manifestations. The factors that contribute to insulin resistance are age, high fat diet, decreased physical activity, increased visceral fat accumulation, smoking and hyperglycemia (**Nesto, 2003**).The world is experiencing 30% increase in mortality due to non-communicable diseases (NCD), from 2, 65, 60, 300 deaths in 2000 to 3, 45, 39, 000 in 2014. Diabetes Mellitus (DM) isthe biggest disorder in this group for Global Burden of Disease (GBD) 2010, which has taken a heavy toll of 12, 81,300 deaths in 2014, 92.7% to rise over 6, 65,000 deaths in 1990.Systemic complications of DM have also shown steep rise like Chronic Kidney Disease (CKD) has caused 91,900 mortality in 1990 as compared to 1, 78,300 in 2014 with 94.1% risein a span of decade.

Nature cure believes that all the diseases arise due to accumulation of morbid matter in the body and if scope is given for its removal, it provides cure or relief. It also believes that the human body possesses inherent self constructing and self healing powers (**Underwood, 1971**).

Treatment of type 2 diabetes mellitus through Naturopathy modalities like hydrotherapy, mud therapy, massage therapy, diet therapy is aimed to improve circulation to the cells with increased activation of venous and lymphatic system. These modalities work by increasing contraction and then relaxation of muscles and blood vessels to provide sufficient blood supply along with nutrients and oxygen, required for normal vital activity of the cells. The venous circulation and lymphatic system are very important in the process of elimination of waste products from the body. Increased activation of these eliminatory channels through

nature cure modalities enhances the transport of waste materials to the heart and then eliminative sites of the body like kidney and skin. This process of increased recycling may therefore promote re-establishing homeostasis resulting in the normal integrity and functioning of the cells and organs with increased synthesis of insulin receptors and reduced insulin receptor blunting. This enhanced homeostatic condition may further lead to increase sensitivity of the cells to respond to normal insulin action (increased insulin sensitivity) with glycemic control (increased glucose tolerance). Besides reestablishing homeostasis, this system of nature cure medicine, at the same time, may strengthen even other body organs to perform their normal functioning in a better manner (**Sasagawa, 2008**).Some studies have even presented few data or too many confounders which make study difficult to generalize; hence the present study was undertaken.

Objectives and Hypothesis:

The study was conducted to determine the effectof 12 weeks naturopathy treatment on diabetes mellitusmiddle aged patients. After thoroughly going through the literature it was hypothesized that there would be no significant effect of Naturopathy Training on the selected variables of diabetes mellitus middle aged patients.

Methodology:

A total of thirtydiabetes mellitus type II middle aged patients were purposively selected from the list of patients visited Ojas Nature Cure Center, NKS Hospital, Gulabi Bagh,Delhi for the treatment of diabetes mellitus type II through Naturopathy under the experts of Ojas Nature Cure Center. The selected patients were in the age range from 40-45 years. The selected patients underwent 12 weeks of naturopathy training in the Ojas Nature Cure Center, NKS Hospital, Gulabi Bagh, Delhi. Glycated Hemoglobin (HbA1C), Fasting Blood Glucose Level (FBS), Post Prandial Glucose Level (PBS), High Density Lipoproteins Cholesterol (HDL) and Low Density Lipoproteins Cholesterol (LDL) were used to measure condition of the diabetes mellitus patient. The results obtained from the blood test on the selected variables were quantified and further paired 't' test was employed to measure the significance in the effect of the naturopathy treatment on diabetes mellitusmiddle aged patients.

Training Protocol:

The training was executed by the scholar himself in the evening from 4:00 PM onwards for 1 to 1.5 hours for three days in a week at Ojas Nature Cure Center, Delhi, i.e.Friday, Saturday and Sunday.The training was continued for 12 weeks. The Naturopathy training included the following treatment protocol:

- Application of Mud Pack (forehead and abdomen)
- Enema (Herbal)
- Hip Bath/ Sauna/ Steam Bath (alternatively)
- Mud Bath.
- The diet was strictly controlled by the patients as per the directions of the expert, during the whole treatment.

Analysis of the Data and Findings:

Table 1. Effect of 12 Weeks Naturopathy Treatment on Diabetes Mellitus Patients

S.No.	Variables	Pre Test	Post Test	Improvement	't'
1	Glycated Hemoglobin (HbA1C)	8.19 ± 0.62	5.75 ± 0.47	29.79%	31.93*
2	Fasting Blood Glucose Level (FBS)	239.37 ± 11.27	118.03 ± 6.87	50.69%	85.77*
3	Post Prandial Glucose Level (PBS)	342.93 ± 8.13	132.10 ± 8.33	61.48%	114.18*
4	High Density Lipoproteins Cholesterol (HDL)	37.00 ± 5.53	46.03 ± 4.96	24.40%	–11.83*
5	Low Density Lipoproteins Cholesterol (LDL)	128.20 ± 11.29	98.17 ± 8.68	23.42%	35.83*

N-30, **Significant at 0.05 level

Table 1 clearly reveals that the Glycated Hemoglobin (HbA1C) had lowered down by 29.79% as the Glycated Hemoglobin (HbA1C) before and after the yoga treatment were found as 8.19 ± 0.62 and 5.75 ± 0.47. This decrease in the level of HbA1C was found significant as the't' values obtained was 31.93 at $p \leq 0.05$. The Fasting Blood Glucose Level (FBS) had lowered down by 50.69% as the Fasting Blood Glucose Level (FBS) before and after the yoga treatment were found as 239.37 ± 11.27 and 118.03 ± 6.87. This decrease in the level of FBS was found significant as the't' values obtained was 85.77 at $p \leq 0.05$. The Post Prandial Glucose Level (PBS) had lowered down by 61.48% as the Post Prandial Glucose Level (PBS) before and after the yoga treatment were found as 342.93 ± 8.13 and 132.10 ± 8.33. This decrease in the level of PBS was found significant as the't' values obtained was 114.18at $p \leq 0.05$. The High Density Lipoproteins Cholesterol (HDL) had improved by 24.40% as the High Density Lipoproteins Cholesterol (HDL) before and after the yoga treatment were found as 37.00 ± 5.53 and 46.03 ± 4.96. This increase in the level of HDL was found significant as the 't' values obtained was 11.83 at $p \leq 0.05$ and the Low Density Lipoproteins Cholesterol (HDL) had lowered down by 23.42% as the Low Density Lipoproteins Cholesterol (HDL) before and after the yoga treatment were found as 128.20 ± 11.29 and 98.17 ± 8.68. This decrease in the level of LDL was found significant as the't' values obtained was 35.83 at $p \leq 0.05$.

Discussion and Conclusions:

The findings of the study revealed a significant improvement among the diabetes mellitus patients as the Glycated Hemoglobin (HbA1C) was improved by 29.79%, Fasting Blood Glucose Level (FBS) was improved by 50.69%, Post Prandial Glucose Level (PBS) was improved by 61.48%, High Density Lipoproteins Cholesterol (HDL) was improved by 24.40% and Low Density Lipoproteins Cholesterol (LDL) was improved by 23.42%. The

Results are supported from a study, which shows that there are lots of chemical agents available to control and to treat diabetic patients, but total recovery from diabetes has not been reported up to this date. In addition to adverse effects, drug treatments are not always satisfactory in maintaining euglycemia and avoiding late stage diabetic complications. Alternative to these synthetic agents, plants provided a potential source of hypoglycemic drugs and are widely used in several traditional systems of medicine to prevent diabetes. Several medicinal plants have been investigated for their beneficial effect in different type of diabetes, other alternative therapies such as dietary supplements, acupuncture, hydrotherapy, and yoga therapies less likely to have the side effects of conventional approaches for diabetes (**Avwanish Pandey, 2011**).

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Effective Loading Patterns During the Fencing Lunge and Fencing Training

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Abstract:

The reason for this article is to propose a fundamental methodological way to deal with a specially appointed practical preparing for fencers of each of the three weapons. Fencing is a lopsided open aptitudes sport with a high mental application and a tremendous effect on the musculoskeletal framework, in this manner requiring an elevated level of actual preparing. Current fencing needs to pick up another presentation model, which contemplates the psychological parts of execution. The new model requirements to make an activity plan for athletic preparing in fencing could be helpful to prepare tip top fencers as well as youthful experts. The primer case report study portrayed beneath means to give a first investigation to distinguish practical activities that could be valuable, if appropriately changed, for improving fencer's engine control and his presentation.

Keywords: Fencing, functional training, education, pedagogy, cognition.

Introduction:

Fencing is a battle sport that doesn't include actual contact aside from the utilization of weapons (foil, epee or saber) to contact the rival in a game activity called assault. This resistance circumstance is comprised of unequivocal, short, quick and complex activities, so speed of development and perceptual precision abilities are basic for a decent presentation. The improvement of the fencing execution level along these lines requires the obtaining of explicit psychomotor and neuromuscular aptitudes that can be passed on through specific practical activities during actual arrangement programs. Practical preparing (FT) has been considered for quite a long time a helpful model for executing engine execution, even in non-sports and neurotic subjects. (Liu et al., 2014; Pedroso et al., 2018; Santos E Campos et al., 2020).

Training methods based on bilateral transfer are mainly used in unilateral (asymmetric) sports [5]. Ruddy and Carson demonstrated that physical training with one arm improves performance with the opposite (untrained) arm. This phenomenon is called intermanual transfer [3]. Similar effects have also been shown in many other motor tasks [4].

Lately, the proposition for FT, in spite of the fact that it has now become such a brand in the realm of solidarity and molding, is developing towards a lively explicitness. This new explicit game proposition permits reconsidering and restoring its latent capacity: it isn't thought of, or characterized, as a progression of activities whose execution in amount is moved to genuine action however it is considered as an arrangement of activities helpful to manage the competitor in complete engine control during a particular game exhibition. In this work, the FT proposition tends to fencing and specifically a particular fencing execution: the control of the body and arm developments. Ongoing examinations (Roi and Bianchedi, 2008) have featured how current fencing requires the organizing of another exhibition model in which engine control, and along these lines intellectual capacity, is an essential component of execution. Planning an activity program for the athletic preparing of the fencer beginning from this model, could give another perspective to think about preparing as a complex academic instructive cycle (Agosti, 2019) and this work focuses definitely toward this path. The proposition of FT practices for fencing is portrayed underneath; the activities have been given to a fencing competitor following a predefined preparing program, which is important for a more extensive athletic preparing venture as an initial step.

Discussion:

- *The link between functional training and fencing performance.*

FT is a preparation strategy that bases its proportion in setting up the body for genuine world "engine challenges, for example, balance, soundness, revolution, flexion and lifting, for example engine control. (Santana, 2015; Agosti, 2018). The essential objective of FT is along these lines to move the engine experience of a particular development to the presentation of another development, in this manner affecting the whole neuromuscular framework.

This guarantees a legitimate usefulness of the sensory system and a fitting utilization of all pieces of the body. This is the reason practical activities are generally planned and coordinated to join and put together different developments at the same time, similarly as it occurs in games execution (football, volleyball, sports, and so forth) Lately, numerous examinations have tried the utilization of FT activities to improve sports execution in different games (Thompson et al., 2007; Ordzhonikidze et al., 2007; Labib, 2014; Cojocaru and Cojocaru, 2016). Late examinations have additionally suggested the utilization of explicit FT programs for equilibrium and soundness as a basic constituent of any reinforcing and molding program. This is an endeavor to improve the adequacy of athletic preparing programs and simultaneously to create practical postural enactment, which is an important component for improving execution as far as both specialized viability and injury avoidance (Tomljanović et al., 2011; Shaikh and Mondal, 2012).

Fencing is a battle sport whose exhibition model requires the securing of explicit psychomotor and neuromuscular abilities, presumably realistic through a particular actual preparing program. Truth be told, until this point, the vast majority of the athletic substance of fencing depends on exact ideas getting from functional experience; then again, logical data identifying with the biomechanical and neuromuscular profile of specialized essentials stays exceptionally poor. Albeit a portion of the physiological, mental and specialized qualities of

first class fencers have been recognized contrasted with beginner fencers, no logical proof has yet decided the particular neuromuscular examples of lower appendage muscles related with energy of fencing development. These explores are anyway exceptionally intriguing, taking into account that both the speed and the precision of the developments (for example engine control) have end up being decidedly related to the viability of the fencing execution, in each of the three weapons. (Guilhem et al., 2014; Turner et al., 2014; Chen et al., 2017). Throughout the long term, this game has had a crescendo both broadly and universally, and the Italian fencers are among the most medaled competitors at the Olympic Games. In this unique circumstance, is a vital condition continue with the organizing of a FT venture that notices the fencing execution wonder completely, in a natural profile.

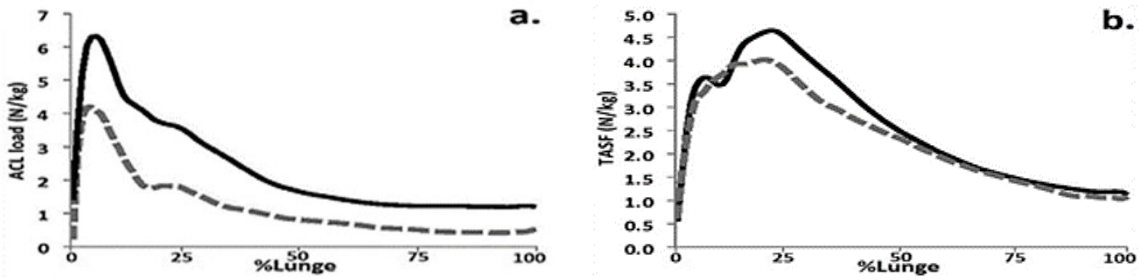

Fig 2. Tibial anterior shear force load as function

- *Fencing Functional Training System (FFTS).*

From the prior, plainly wearing presentation can't be considered as an amount of developments or muscle initiations however should be noticed and prepared completely, which can't be isolated from an instructive goal. That is the reason the objective of this work is a fundamental venture proposition expected as a work apparatus to make the instructive activity more focused on, persistent and powerful, on the grounds that it reacts to genuine necessities (Brandani, and Tomisich, 2014). The proposition of this task at that point moves from an unthinking vision of development and takes a gander at sport execution, for this situation fencing, in a foundational viewpoint. In this foundational point of view, preparing and execution can be considered as a complex pedagogical-instructive cycle (Bellotti and Matteucci, 1999). A starter case report study is presented, directed on a tip top competitor (sexual orientation: F; mass: 58 kg; tallness: 160 cm; age: 19yy), foil weapon, with 10 years of involvement with public and global rivalries. The competitor was given a FT program dependent on changed activities for fencing.

- *Fencing Functional Training System (FFTS).*

The point is to improve athletic capacity however through the improvement of engine control, explicitly useful equilibrium and security. To get an academic instructive cycle, in other words an approach to "draw out" the intellectual part of the engine work (efference) and to improve the fencing execution in a first class competitor, they have been planned and proposed FFTS practices that require the quest for sensation data (afference) through explicit verbal guidelines. The fundamental idea of the activities isn't simply identified with engine control however to the acknowledgment and comprehension of the development itself: the primary target lies in creation the competitor free and mindful of his following up on the stage

and simultaneously, acting in his athletic execution. The activities, indeed, can be viewed as intellectual issues that the competitor unravels by searching for somesthetic data. The activities picked for the program are the Battle Rope Squatting Alternating Waves and the Kettlebell Windmills, changed as far as fencing, which incorporated the utilization of two average FT apparatuses: rope and kettbell (see Fig.1 A-B and Fig.2 A-B). The activities were proposed not as a simple execution yet rather by giving the competitor distinctive somesthetic objectives through explicit verbal guidelines. The instructional meetings were proposed with the occasions and ways portrayed in Fig.3.

To gauge the pre and post FFTS neuromuscular execution, the Dynamic Leap and Balance Test (DLBT) was utilized, a test made as a proportion of the sort of equilibrium and the dynamic limit of joint strength needed in many games (Jaffri et al., 2017). The execution of this test requires coordination, equilibrium, adaptability and strength both in the lower and upper appendages and in its particular execution needs the control of the development of the pieces of the body on a help base that changes into a substituting arrangement of burden in the lower appendages (Fig . 4).

The DLBT is an ease clinical test, which doesn't need the utilization of explicit apparatuses, thusly effectively executable and repeatable in any exercise center. Accomplishment of harmony has been surveyed utilizing an approved quality scoring framework, the One Leg Loading Quality Assessment Tool (QASLS) (Herrington et al., 2013). The score of this framework is dichotomous of the development system that happens in the individual areas of the body (arm, trunk, pelvis, thigh, knee, foot). The score is characterized as 0 for a fitting system and 1 for unseemly developments, given for every district of the body. The best in general score is 0 and the most exceedingly awful is 10 focuses. The score sheet is appeared in Fig. 5.

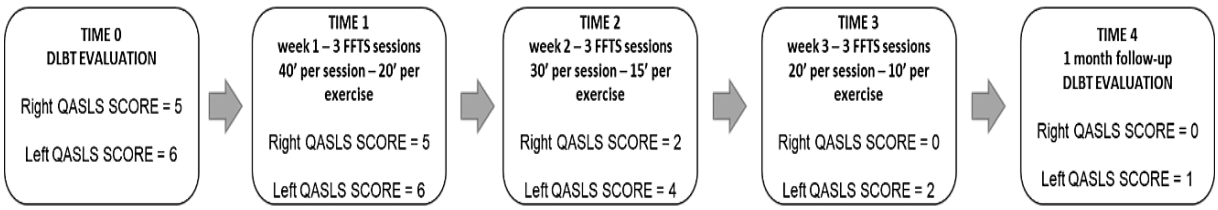

Fig 3. FFTS Training Sessions Timeline

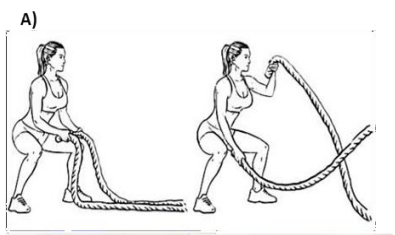

FIG. 1 – A) Battle Rope Squatting Alternating Waves
B) FFTS Battle Rope "en garde" Waves

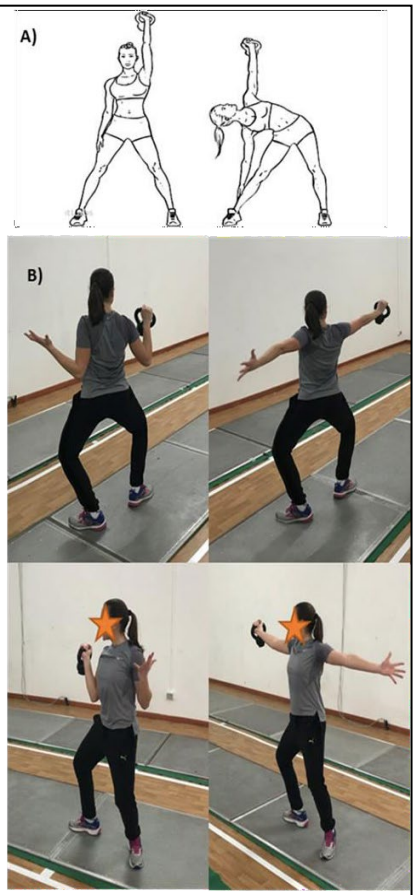

FIG. 2 – A) Kettlebell Windmills
B) FFTS Kettlebell Windmills "en garde"

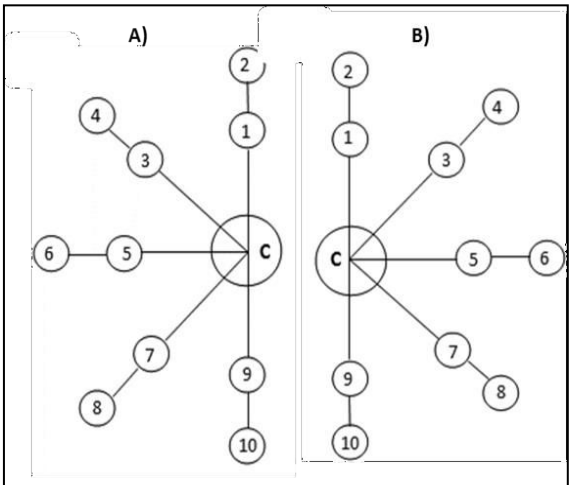

FIG. 4 - (A) DLBT pattern for right limb dominant
(B) DLBT pattern for left limb dominant

DLBT=Dynamic Leap and Balance Test; (1) Anterior short, (2) Anterior long, (3) Anteromedial short, (4) Anteromedial Long, (5) Medial short, (6) Medial Long, (7) Posteromedial short, (8) Posteromedial long (9) Posterior short (10) Posterior long, (C) Central Target. (modified from Jaffri et al., 2017)

DATE:

ATHLETE:

CONDITION: LEFT RIGHT BILATERAL

QASLS	Task: Single leg squat Single leg step down Single leg hop for dist	Left	Right
Arm strategy	Excessive arm movement to balance		
Trunk alignment	Leaning in any direction		
Pelvic plane	Loss of horizontal plane		
	Excessive tilt or rotation		
Thigh motion	WB thigh moves into hip adduction		
	NWB thigh not held in neutral		
Knee position	Patella pointing towards 2nd toe (noticeable valgus)		
	Patella pointing past inside of foot (significant valgus)		
Steady stance	Touches down with NWB foot		
	Stance leg wobbles noticeably		
	Total		

Fig.5 - Qualitative scoring card for QASLS observation

Results:

The data given from the scores in the different study times proved that the FFTS program, evaluated using DLBT and QASLS, is effective in improving the athlete's motor control both in terms of balance and dynamic stability. At the baseline, before starting the FFTS, the athlete's motor control was not completely positioned on a satisfactory score, particularly with respect to the intersegmental ratio (see scores in Fig. 3): However, this initial score gave us the opportunity to evaluate the wide room for performance's improvement. After the administration of the FFTS exercises, the performance status was significantly improved (see scores in Fig. 3). Furthermore, the 1-month follow-up allowed us to monitor the long-time retention of the intervention, demonstrating a motor learning and a change in motor behavior (see scores in Fig.3).

The experiment aimed to compare the accuracy of hits before and after the specialized training and to assess the durability of its effects [14]. For each participant, hit accuracy and handgrip strength were assessed at each test session.

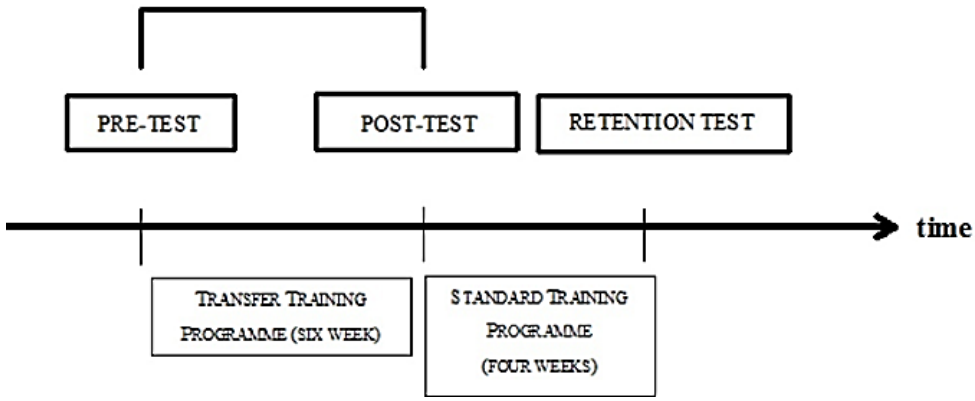

Fig 6. The Timeline of the Experiment

The specialized training program was implemented in the experimental group for six weeks, 30 min a day. It started off with two weeks of whole-body coordination activities involving both sides of the body; the activities used regular size balls of various textures and weights, a small size tennis ball, and a floor ladder. Each exercise was practiced three times on the non-dominant side and once on the dominant side. These activities were followed by two weeks of eye-to-hand and eye-to-foot coordination exercises with the additional equipment: fencing foils (appropriate for the non-dominant hand) and the Favero EFT-1 electronic fencing target (FaveroEletronicsSrl, Arcade, Treviso, Italy). During the final two weeks, the fencers practiced lunges, parries, and other fencing techniques with the non-dominant side, with proper footwork, and repeated the activities practiced earlier, again for both sides with the three-to-one ratio. More details of the program can be found in Witkowski et al. In order to provide a more in-depth picture of the use of transfer training in foil fencing training, future research should deal with various aspects of the phenomenon. First, for the moment we have no knowledge of how advanced foilists would react to transfer training. Secondly, the retention tests in this study were performed four weeks after completing the experimental training, but its effects did not last so long. It does not mean, however, that they vanish right after finishing the training—their durability is worth checking in future experiments. Thirdly, other criteria than hand grip strength and the accuracy of straight thrust

might be used to assess the efficiency of transfer training. Last but not least, transfer training itself can take various forms. So, designing effective transfer training programs constitutes yet another crucial topic for in-depth research.

Conclusion:

The connection between instructive hypothesis and instructive practice is intervened by an instructive model which in game is the presentation model. The hypothesis practice relationship speaks to one of the vital inquiries in the epistemological component of teaching method where hypothesis, without training, is unfilled, similarly as training, without hypothesis, is visually impaired. As such, a hypothesis inconsequential to the issues of instructive practices winds up being dynamic and incapable, yet training without hypothetical light is probably going to meander in obscurity by preliminaries and blunders. The connection among hypothesis and practice suggests the progress from insightful information to a functioning one, so there is the need to apply a plan model to sports preparing, specifically to utilitarian preparing for the improvement of athletic execution in fencing. As far as anyone is concerned, this is the main investigation that thinks about fencing preparing as a complex academic instructive cycle and that proposes a psychological way to deal with useful athletic exercise. It very well may be considered as a primer case report study, hence having a few constraints in the strength of the information yet positively without restrictions in the logical robustness of approach. To make an engine learning circumstance, the function of the athletic mentors should be to more readily comprehend the multifaceted nature of the exhibitions and therefore adjust the activities to the game and the subjectivity of the competitor. This is the best way to propose the activity not in a chief structure but rather in an intellectual one and to make preparing as a framework that moves inside a games instructive task, even in first class competitors. Further examinations or preparing models are expected to all the more likely comprehend fencing from a neuro-psycho-physiological perspective to amplify sport-explicit execution and improve engine control.

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Advantage of Yoga in Reducing Stress Among Healthy Adults

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Abstract:

Background - Yoga has been prescribed for therapeutic approaches in both clinical and non-clinical populations. The range of yoga practise as a therapy tool has rarely been explored and the effects of yoga on stress need to be addressed.

Primary Study Objective - The goal of this paper is to investigate the benefits of various forms of yoga on stress in a healthy population. On the other hand, the authors aimed to systematically classify yoga effects on stress.

Methods/Design - To classify articles that examine the impact of yoga and yoga-related techniques on stress reduction in non-clinical populations, a systematic literature review was performed. Studies were categorised according to the duration of the intervention, form of yoga, and result measurements. The studies were selected throughout last 5 years (January 2015 to November 2019) by using the key searching term yoga and stress incorporation with tension and pressure. The selection process followed the Prisma flow diagram.

Results - Overall, the study included 12 studies elaborating on the impact of yoga or yoga-related treatments on stress control and remission. There were different forms of yoga practise in this study (e.g., Hatha yoga, Bikram yoga, Kundalini yoga, Sudarshan Kriya yoga, Kripalu yoga, Yin yoga). A time spectrum of 4 wks to 28 wks was performed. This analysis found that in heathy communities, most forms of yoga have beneficial effects on stress reduction.

Conclusion - Further studies are recommended to examine the long-term effect of yoga and underlying psychological mechanisms causing stress and mental restrain. In addition, it is suggested to consider age as a risk factor affecting the effect of yoga on stress.

Introduction:

Among all age groups, including older adults, yoga has become popular as a therapeutic and relaxation intervention., by which the highest reality was reached[2]. Nevertheless, despite the wide variety of yoga, its implementation was successful worldwide in scientific research. The effects of yoga on health have been illustrated many times. Studies have shown that yoga benefits health both in clinical patients and nonclinical populations. Yoga as a treatment for insomnia among patiens with cancer and survivors was systematically reviewed and suggested promising evidence of yoga for its efficacy in improving insomnia and sleep quality impairment[3]. Evidence showed psychophysiological effects of yoga, and endogenous secretion of melatonin was suggested to increase, which in turn may be responsible for enhancing the sense of well-being[4] In addition, meditation also showed physiological effects by raising cardiac activity, which inherently affects the basal metabolic rate[5] In terms of cognitive function, yoga practise showed no substantial importance of life and physical measures[6]. Nevertheless, yoga-based intervention program is feasible and efficacious in creating positive improvements of health and wellness[7]. The psychological influence of yoga has been explored in previous studies. It seems that yoga works on depression, anxiety, and self-efficacy. For example, the efficacy of yoga in the treatment of anxiety and anxiety disorders was explored in a systematic review carried out in 2004. Despite the variety of intervention conditions and low consistency of the trials, evidence showed promising outcomes for obsessive compulsive disorder. [8]. Demonstrated by a recent

review that involved 27 studies, of which 19 studies reported significant reduction in state and/or trait anxiety[9]. In women who suffer from anxiety disorders, 2-month yoga class can lead to significant reduction in perceived levels of anxiety[10]. The effect of yoga and stress has been examined in wide range of age groups and social status including prisoner and office set[11]. It underlined the mechanism of yoga and stress. The relationship between yoga and stress was all mediated by positive effects, self-compassion, inhibition of the posterior hypothalamus and salivary cortisol from a current systematic review[13] Because of the variety of yoga practises and the vulnerable evidence that existed in yoga styles and stress in healthy populations, the present study sought to better characterise the benefits of yoga on stress. This systematic review evaluates the current scientific evidence of yoga practice on stress. We hypothesize that any types of yoga will have beneficial effects on stress. We examined this question across a large age range.

Table 1. Inclusion and exclusion criteria used when selecting articles in the systematic review

	Inclusion criteria	Exclusion criteria
Population	People above 18 years old	People with clinical symptoms (physical or mental disorder, or undergoing regular medical check) or in shift-work schedule
Intervention/exposure	Yoga based study on stress Empirical or observational Original studies	Review (systematic review; meta-analysis) longitudinal study (follow-up study or retrospective study); Mixed study methods
Comparison	Contain intervention and controlled groups	Case-control studies
Outcome		Outcome elaborated the effect of yoga on stress
Other	Timeframe from January 2014 to November 2018	Questionable analysis methods. Non-English study

Methods:

To examine our hypothesis, we conducted a systematic review.

Databases and Search Terms:

In the study collection, the PICO standard[15] was used as a supporting guideline. All manuscripts initially considered significant by title and abstract were eligible for inclusion prior to evaluation by PICO. PICO Standard for Details:

P (population): Balanced participants regularly (not hospitalized patients or with clinical diseases, not pregnant ladies, not in day-night shifting works).

I (intervention/exposure): Yoga-based intervention organising.

C (comparison): Research comparing condominiums with active adults conducting yoga practice versus healthy adults not conduction yoga practice, where such comparison has been performed;

O (outcome): Effects of yoga practice on stress.

Inclusion and Exclusion Criteria:

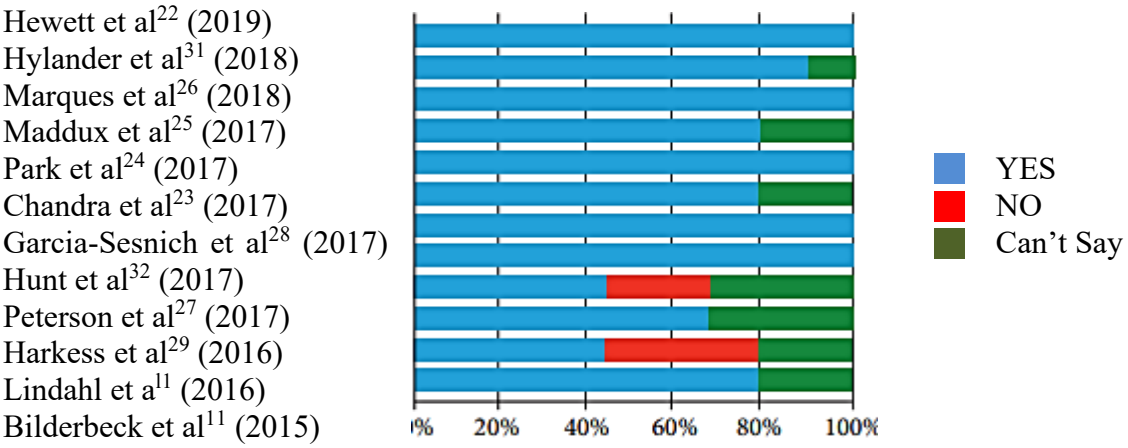
In adults, the root of stress varies with respect to life management and social commitment. We approved only adult studies conducted (18 years and older in this study). Trials were disqualified if there were any participants who were psychiatric patients with physical or emotional symptoms, migrant workers, sleep disturbances or perinatal mothers. The reason we excluded shift-working staff was that, relative to the healthy population with reg, shift workers could experience additional stress. Pregnant women who have to go to hospital for regular medical check were excluded due to their special body condition. People who undergo sub-health condition (e.g., people with sleep disorders, insomnia) were also excluded because stress may interact with sub health conditions.

Studies performed using multiple or mixed methods of study were removed. Furthermore, in this report, we have omitted the publishing of review articles and letters to editors. If many published reports were available from the same trial, only the reports containing the most qualified details would be taken into account. Nonetheless, the sample size was not taken as an exclusion criterion, Meanwhile, reviews or longitudinal studies were not included. The inclusion and exclusion criteria are presented in Table 1.

Quality Assessment:

We used the Critical Appraisal Skills Programme (2018)[16] checklist to assess the quality of the selected studies. These checklists were designed to be used as educational pedagogic tools, as part of a workshop setting, therefore we do not suggest a scoring system. The core CASP checklists were based on JAMA 'Users' guides to the medical literature adapted from Guyatt et al[17], which piloted with health care practitioners. The checklist was adopted when rating the selected studies, we did not make comments on the studies. All items are rated as "yes," "no," or "can't tell," and Figure 1 summarizes the items by the checklist.

Figure 1. Checklist of Quality Assessment of Selected Studies



Note: %Y = percentage of "Yes"; %N = percentage of "No"; %CT = % of "Cannot tell."

Table 2. Assessment of Risk of Bias

Studies	Adequate sequence generation?	Allocation concealment?	Blinding (of outcome assessors)	Incomplete outcome data addressed?	Selective outcome reporting?	Overall assessment of risk of bias
Hewett et al[22] (2019)	Yes	Yes	Yes	Yes	Yes	Low
Hylander et al[31] (2018)	Yes	Unclear	Yes	Yes	Yes	Uncertain
Marques et al[26] (2018)	Yes	Yes	Yes	Yes	Yes	Low
Maddux et al[25] (2017)	Yes	Yes	Yes	Yes	Yes	Low
Park et al[24] (2017)	Yes	Yes	Yes	Yes	Yes	Low
Chandra et al[23] (2017)	Yes	Yes	Yes	Unclear	No	Uncertain
Garcia-Sesnich et al[28] (2017)	Unclear	Yes	No	Unclear	Yes	Uncertain
Hunt et al[32] (2017)	Yes	No	No	Yes	Yes	High
Peterson et al[27] (2017)	Yes	Yes	No	Yes	Unclear	High
Harkess et al[29] (2016)	Yes	Yes	Unclear	Yes	Yes	Uncertain
Lindahl et a[11] (2016)	Yes	Yes	No	Unclear	No	High
Bilderbeck et al[11] (2015)	Unclear	No	Yes	Yes	Unclear	High

Note: "Low" indicates low risk of bias; "High" indicates high risk of bias; "Uncertain" indicates the risk of bias is uncertain

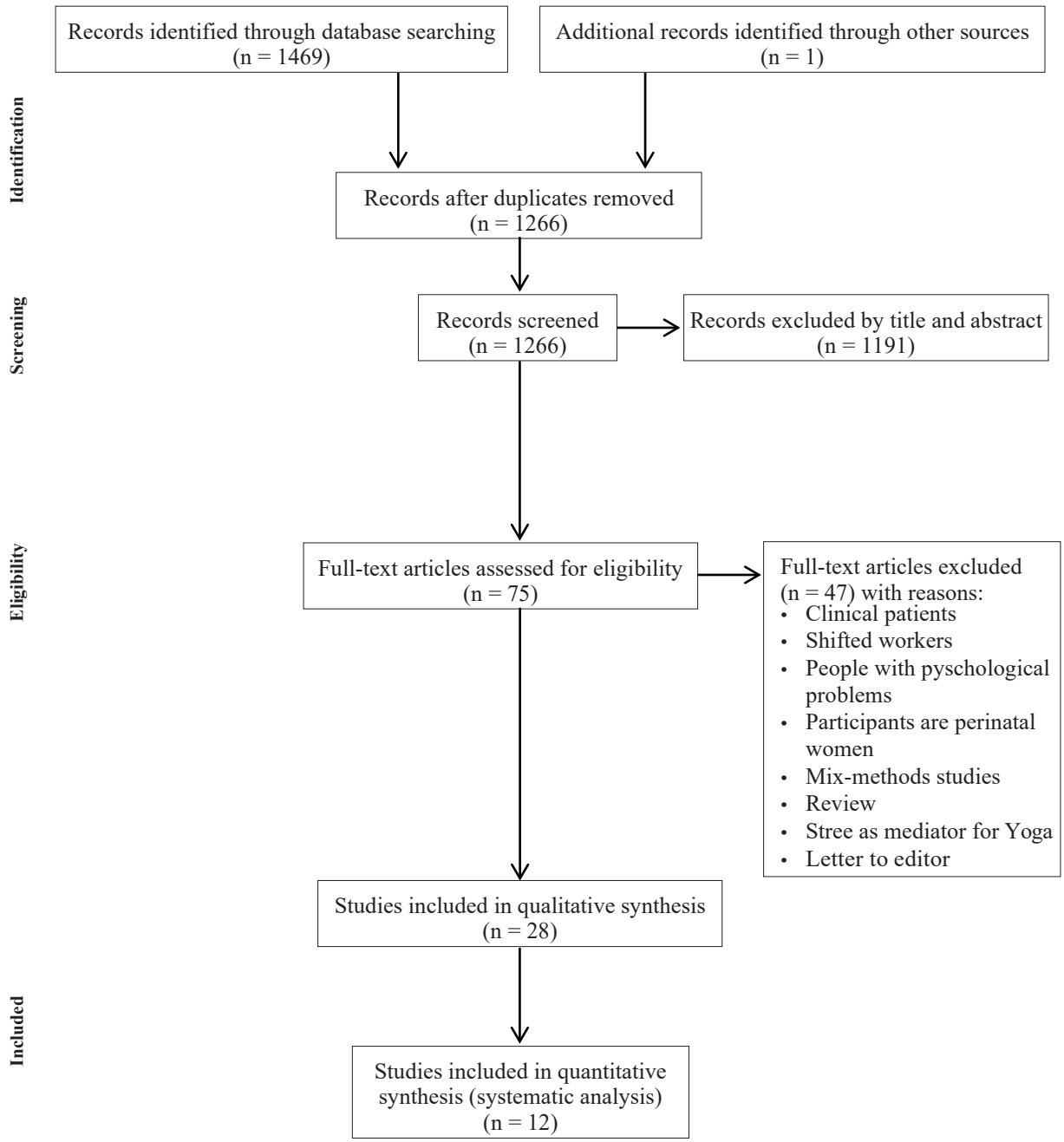
Bias Assessment:

In systematic analysis, publication bias must always be taken into account. However, there is no exact method to test the publication bias so far. With the systematic search approach, we relied on Cochrane's risk of bias evaluation tool to investigate the possible impact of publication bias on our findings. There are 2 dimensions concerning the validity of the study to assess whether the study is asking appropriate research question (external validity), and whether it answers its research question "correctly" (internal validity).18 The Cochrane tool of risk of bias examined all of the included studies from 5 domains:

1. Was the allocation sequence adequately generated?
2. Was allocation adequately concealed?
3. Was knowledge of the allocated intervention adequately prevented during the study?
4. Were incomplete outcome data adequately addressed?

5. Are reports of the study free of suggestion of selective outcome reporting, and each of questions was given 3 answers: yes, no or unclear. Higgins suggested that if a trial address all the 5 domains with "yes," the trial will be considered to have "low overall risk of bias"; however, in cases in which even one of those 5vdomains get an "unclear" or "no" assignment, the trial will be considered to have an " unclear or high overall risk of bias."18 The details risk of bias assessment is listed in Table 2.

Figure 2. Study Selection Process



Results:

Study Selection Flow:

Searching the database using the mentioned method led to 1469 studies being retrieved. The online website of an additional source (International Yoga Journal) was reviewed. Phase by step, all of the studies were filtered. It is possible to spot out the disqualified participants (e.g. psychiatric patients, people under normal medical control) and testing methods from tittle and abstract (eg, reviews, protocols). After screening titles and abstracts, 75 papers were reviewed in full-text. The Articles were examined by the aforementioned exclusion criteria. Finally, 12 studies were included in the system review. The flow chart of study selection process was showed in Figure 2.

Characteristics of Included Studies:

672 participants participated in the 12 studies. In Table 3, the specifics of the papers concerned are presented. Studies for both case and control group comparisons were included based on the eligibility requirements. Different methods of intervention have been carried out in adult populations of different ages. There were different styles of yoga practise (e.g., Hatha yoga, Bikram yoga, Kundalini yoga, Sudarshan Kriya yoga, Kripalu yoga, Yin yoga) with a 3-week spectrum from 4 weeks to 28 weeks. Single studies were published in 2015 and 2019, 2 studies were published in 2018 and 2016, and the rest of the included studies were published in 2017. All of the studies organized case group and control group and measured the participants pre-post intervention. Participants were distributed randomized or nonrandomized. Stress was measured by perceived stress scale (PSS) in all of the studies. Studies either use 4-item or 10-item of PSS. Additional scales such as Beck Depression Inventory (BDI)[19] Depression, Anxiety and Stress Scale (DASS-21)[20], and Kessler Psychological Distress Scale (K10)[21] were used in these studies.

Table 3. The details of selected studies

Study	Participants	Intervention method	Duration	Study design	Outcome	Measure-ments of assessing stress
Hewett et al[22] (2019)	63 Adults (37.2 ± 10.8 y)	Bikram yoga	16 weeks	A randomized controlled trial	P.E.	10-item Perceived Stress Scale (PSS)
Hylander et al[31] (2018)	49 middle-aged participants	Yin yoga	5 weeks	A case-control study	P.E.	4-iterm Perceived Stress Scale (PSS-4)
Marques et al[26] (2018)	34 women (83.16 ± 7.4 y)	Chair-based yoga	28 weeks	Case-control study	P.E.	Perceived Stress Scale (PSS)
Maddux et al[25] (2017)	80 students (mean age 46y)	Power yoga	16 weeks	Pre-post intervention	P.E.	10-item Perceived Stress Scale (PSS)

Park et al[24] (2017)	51 first-year undergraduates	Kripalu yoga	8 weeks	A randomized controlled trial	P.E.	21-item Depression, Anxiety and Stress Scale (DASS-21)
Chandra et al[23] (2017)	20 humans aged 21 to 30y-old	Sudarshan Kriya yoga	30 days	Case-control study	P.E.	Stress Determination Test (SDT)
Garcia-Sesnich et al[28] (2017)	26 people aged 18 to 45y-old	Kundalini Yoga	3 months	Case-control study	P.E.	Perceived Stress Scale (PSS) (Spanish version)
Hunt et al[32] (2017)	60 undergraduate students	Mindfulness training; Yoga alone	4 weeks	Case-control study Pre-post intervention	P.E.	Beck Depression Inventory (BDI) Spielberger State/Trait Anxiety Inventory
Peterson et al[27] (2017)	142 individuals (43 ± 13.90 y)	Multicomponent Breath-Based Yoga	6 weeks	Pre-post intervention	P.E.	10-item Perceived Stress Scale (PSS)
Harkess et al[29] (2016)	84 middle-aged women	Yoga class	2 months	A case-control trial	P.E.	Kessler Psychological Distress Scale (K10); Perceived Stress Scale (PSS)
Lindahl et al[1] (2016)	8 participants (66.5 ± 0.3 y)	60-min Hatha yoga sessions	7 weeks	Pre-post intervention	P.E.	Perceived Stress Scale (PSS)
Bilderbeck et al[11] (2015)	55 participants (prisoners)	Yoga course	10 weeks	Pre-post intervention	P.E.	Perceived Stress Scale (PSS)

Note: P.E.= Positive Effect; N.E.= Negative Effect; N/L= No effect or Lack of evidence

Effects of Yoga on Stress:

Greater improvement (or decrease) in perceived stress showed significant relation to greater yoga class attendance. Despite the duration, length, frequency, and types of yoga practice conducted in difference trials, positive results of yoga were found. Baseline and postintervention characteristics were measured of the 8 participants who completed Hatha yoga intervention, and perceived stress levels assessed by the PSS significantly decreased after the intervention (preintervention, 13.6 ± 1.2 versus postintervention, 8.9 ± 1.2), with a large effect size of 1.38. A 16-week Bikram yoga program conducted randomized control

study also revealed a significant decrease in perceived stress (P = .001, η2 = 0.173, 4.7 [95% CI: 2.1, 7.4)] at end of intervention in the experimental versus the control group.22 Sudarshan Kriya Yoga (SKY) including Sudarshan kriya, Bhastrika pranayama, and Yoga nidra, is believed to be a powerful rhythmic breathing technique, and proved to be a more positive alternative of "medication" for stress management in previous study[23].

The association between age and yoga effect was under investigation. Stress management interventions were highly regarded by first-year college students and demonstrated dominant effects by Park et al[24]. The yoga-based intervention consisted of Kripalu yoga (a form of hatha yoga) was reported as being helpful in school and at home. Power yoga was organized in males (n = 43, age: 45.5 years [10.0]) and females (n = 43, age: 47.1 [10.4]), and after 16 weeks' intervention, the PSS scores dropped significantly.25 Nevertheless, the included articles showed clues of the interaction between age and the function of yoga practice. A group of older women (age: 83.16 ± 7.4 years) participated chair-based yoga, consisted of an exercise class intervention which based on the essential philosophy of Hatha yoga and its asanas, presented differences with a large effect size (P = .052, d = .85) in the exercise group (age: 83.73 ± 6.86 years) and control group (age: 82.73 ± 8.46 years).26 In addition, the examination of Kundalini Yoga (KY) after 3 months of regular practice presented statistical significance of perceived stress score compared with control group in the basal measurement[27].

The 3-day retreat program, named Shambhavi Mahamudra kriya, is a yogic practice that includes both deep breathing and meditation techniques suggested that may represent a natural treatment for stress reduction. However, it is suggested to take long-term effect of yoga intervention into consideration. Harkess[28] yielded that short-term yoga practice may yield some benefits to stressed individuals, but the long-term evaluation is required to determine the optimal dose for improvements and maintenance.29 In the study, women (n = 116) between the ages of 35 and 65 years were allocated to a twice-weekly, hour-long yoga class for a period of 2 months, or into a waitlist control. Following the statistical methods of mixed-model analyses of variances and quadratic time (Time 2) included for PSS examination, the study showed that stress level did not improve significantly.2

The effectiveness of yoga and mindfulness practice on stress need to be clarified. There are differences and interactions between yoga and mindfulness. Both meditation and yoga are implementations of mindfulness therapy[30]. The YOMI program, a psychoeducational training program that bridges psychological theory and knowledge with the practice of mindfulness and yin yoga, contributed significantly to decreased levels of perceived stress increased levels of mindfulness to participants.31 Hunt et al[32] conducted a multigroup study with 4 groups ("Mindfulness Training Alone"; "Yoga Alone"; "Multicomponent Mindfulness Training groups"; "Study Break with a Therapy Dog") dismantled yoga and explicated mindfulness training in a brief stress reduction intervention in college students.32 It is suggested that the "mindfulness training alone group" experienced the least stress challenge compared with combined group and yoga alone group.

Discussion:

The evidence of the positive influence of yoga on the management of stress is clear. Both types of yoga and yoga-based techniques (e.g., mindfulness-based yoga, meditation-based yoga) have shown major benefits for stress reduction. The effects of yoga on stress have been studied from a wide variety of viewpoints. To aid stress reduction and

management, the variety of yoga practise and in combination with mindfulness intervention are suggested. Yoga features a long history and recognized as a sort of mind-body medicine. The physical postures and breathing exercises improve the strain outcomes like physical and mental tension[33]. this will be a robust explanation for the mechanism of yoga on stress. a scientific review supported the finding that yoga has positive effect on stress reduction in healthy adult populations[34].

Further studies to determine yoga's long-term effects was suggested by Chong et al[34]. In our study, we found that the interventions duration seems to be an important factor of yoga effectiveness. Studies with longer intervention period produced convincible results. albeit short-term intervention also showed beneficial result toward stress. However, the beneficial effects of short term yoga might not translate into future effects as well[35].

Aging is related to a decline in physical function, which is that the combination of a loss of muscle mass and reduced muscle function[36]. Eight studies during this review conducted with middle aged and older adult participants. it had been indicated that Yoga practice showed modifiable effects on baroreflex in elder population[37]. Thus, yoga practice with physical movement and gestures should be taken into consideration before conducting among older adults.

Limitations:

Limitations exist in this review. Methodological problems appeared in most of the selected studies including sample size limitation, short intervention period, and other factors. As mentioned previously, we did not take small sample size as an exclusion criterion, but a small sample may bias the validity of the study. In addition, the effect size of the included studies was not considered in the statistical analysis.

Conclusion:

Though the association of exercise and age by previous study showing that a lot of critical questions remain regarding the connection of aging and exercise, the positive effects of yoga were highly regarded. Both cognitive behavior modification and yoga are promising stress management techniques[38]. as long as yoga and cognitive behavior modification (CBT) haven't been indicated any difference in dealing with stress, it's suggested to explore the deeper function of yoga and CBT in neurology level. Due the varied subcategories of yoga, a comprehensive knowledge of yoga is suggested.

Moreover, physical activity has many well established health benefits, and physiological benefits of yoga help people become more resilient to stressful conditions, but strenuous exercise increases muscle oxygen flux and elicits intracellular events which will cause increased oxidative injury.39 Nevertheless, more studies should be conducted to underlay biological mechanisms resulting in its stress reduction effect in healthy populations.

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