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EFFECT OF YOGA ON PHYSICAL AND PSYCHOLOGICAL WELLBEING IN HEALTH CARE WORKERS DURING THE COVID 19 PANDEMIC

INTRODUCTION:

Health is a state of complete physical, mental and social wellbeing and not merely an absence of disease or infirmity**.** Physician burnout is an under-recognized and under-reported problem which affects more than 60% of HCWs. It is now recognized that organizations have a major role in causing, preventing, and mitigating physician burnout. The COVID-19 pandemic has been and still being a significant burdens globally. Pertaining to infection, death, stress, financial burden and fear. Especially, Healthcare workers (HCWs), who faces challenges like treating patients with COVID-19 with an attempt to reduce the spread of infection along with the personal duties and responsibilities.

MATERIAL AND METHOD:

This is a Pre and Post interventional study design experimental non randomised study with 50 Samples of Health Care Workers (HCW) from the Lotus Multispecialty Hospital, Erode, Tamilnadu, who were in COVID duty were selected for the study for about 21 days with the Yoga intervention for 30 minutes.

RESULTS:

There is statistical significant result observed in the interventional group than the control group in terms of personal, work related and client related burnouts in HCWs.

CONCLUSION:

Yoga which is anaerobic and aerobic exercise improves the musculoskeletal aspect, hormonal and metabolic balance. This is achieved through the meditative and psychoanalytic techniques which relaxes and brings the self-awareness, emotional control, cognitive flexibility, increases attention. It is necessary to broaden the subject and acquire more scientific evidence by designing and implementing research studies with a solid methodological structure on bigger sample groups.

Key words- Yoga, Naturopathy,

INTRODUCTION:

Health is a state of complete physical, mental and social wellbeing and not merely an absence of disease or infirmity**.** Health is multidimensional. According to World Health Organisation (WHO), there are three specific dimensions – physical, mental and social. The health care and social services sector is a large employer sector. Workers in this sector experience high rates of injury (musculoskeletal injury) due to excessive exertion and stress. The causes may be frequent lifting, transferring, and repositioning of patients leading to the causes of musculoskeletal injury among health care workers in both acute and long-term care settings, whereas Stress to Failure (STF) is the another issue which is commonly prevalent among the workers and community health workers. Some of the commonly faced issues by the Health Care Workers (HCW) are physical, chemical, biological, radiation, reproductive health, stress, psychiatric disorders, stalking by patients and violence as reported in various studies. Health Care Workers experience Direct contact with contaminated specimens, Airborne diseases, Infectious disease and or Infections, Others like blood borne pathogens and vector borne diseases and non-biological hazards which include stress, physical, psychological, social or sexual abuse, musculoskeletal injuries fall fracture and chemical spills, burn, noise and radiation. The Occupational Safety and Health Administration (OSHA) reports Sprains, strains are reported very often, Shoulders, low back, calf muscles, and hand muscles are most affected body parts. Physician burnout is an under-recognized and under-reported problem which affects more than 60% of HCWs and few were unaware of their stress and distressing techniques. It is now recognized that organizations have a major role in causing, preventing, and mitigating physician burnout and which must be addressed by organizational change. The HCWs are suggested for the exercise of about 30-60 minutes for 5-7 days a week along with the use of stairs in the hospital. Health managers should ensure the health and prevention of the HCWs.(1) The COVID-19 pandemic has been and still being a significant burdens globally. Pertaining to infection, death, stress, financial burden and fear. Especially, Healthcare workers (HCWs), who faces challenges like treating patients with COVID-19 with an attempt to reduce the spread of infection with short and long term plans along with the personal duties and responsibilities of their kith and kinks. Along with that the psychological burden and overall wellness of HCWs with high rates of burnout, psychological stress, and suicide were also observed in various researches.(2) The term "burnout" is for the Health Care Workers, indicates a prolonged exposure to physical and psychological stress which deterioration of the emotional functioning of the individual and adaptation to their professional commitments.(3) Yoga is a form of mind-body fitness that involves a combination of muscular activity and mindful awareness. Regular practice of yoga which enhances the strength, endurance, flexibility and facilitates the characteristics of friendliness, compassion, and greater self-control, along with the sense of calmness and well-being. Yoga enhances a physiological state balancing the flight-or-fight response balancing the union of the mind and body. Recent research on healthcare professionals has shown a significant improvement in personal accomplishment, depression, anxiety, stress, perceived resilience and compassion by practice of Yoga. Research on Yoga techniques has findings about their key role in reducing the levels of inflammatory cytokines. This includes IL-

1β, IL 6 and TNF α which implicates risk reduction for diseases with inflammatory component.(4) This study is aimed to assess the acceptability and effectiveness of Yoga interventions on the health and wellbeing among the Health Care Workers. The main objective of this study is to assess the efficacy of short term yoga interventions on aspects of personal , work related and client related burn out among health care workers posted in COVID wards.

MATERIAL AND METHODS:

Ethical clearance was obtained before the start of the study form the institutional Ethics Committee. This is a Pre and Post interventional study design experimental non randomised study with 50 Samples of Health Care Workers (HCW) from the Lotus Multispecialty Hospital, Erode, Tamilnadu, who were in COVID duty were selected for the study. Out of 50 HCW, 25 HCW were given yoga intervention and rest 25 were provided with general awareness about the COVID. The participants were explained and information about the study was provided through information sheet and written informed consent were taken. No incentives were provided to the participants for the study purpose. The study period was from 10th June to 2nd July 2021. Health Care Workers were asked to perform yoga under expert supervision daily for 30 minutes which included asana, pranayama and chanting; thrice a week along with deep relaxation techniques thrice a week for 21 days through online lecture delivery mode from morning 6.30 am to 7am or in the evening by 6.30 pm to 7pm. Self-administered Copenhagen Burnout Inventory scale along with a personal interview was used for screening and assessing the physical and psychological wellbeing of the HCW, one first day before intervention and on 21st day of intervention after the session. The data collected was coded and entered in Microsoft excel 2013. It was checked for normality of distribution using Shapiro will test. Descriptive statistics was used for frequency and percentage calculation. Pre and Post intervention comparison was done using Chi square test. SPSS 20.0 was used to carry out the data analysis. All p values less than 0.05 was considered to be statistically significant. Both male and female health workers between the age group 20 to 55 years posted in COVID wards working at lotus multi-specialty hospital. Medical doctors, administrative staff or health care workers with history of any recent surgery, pregnancy or any kind of limitation to perform yoga will be excluded.

RESULT:

Table 01: Baseline Burn out score

		Group				Chi square test
		Experiment(n=25)		Control(n=25)		
		n	%	n	%	
Age	<20 years	2	8.00%	3	12.00%	χ2=1.33p=0.51(NS)
	21 -30 years	17	68.00%	13	52.00%	
	>30 years	6	24.00%	9	36.00%	
Sex	Male	2	8.00%	3	12.00%	χ2=0.22p=0.64(NS)
	Female	23	92.00%	22	88.00%	

On comparing the experimental and control group, no difference was seen at baseline for the Burn out scores.

Table 2: POSTTEST COPENHAGEN BURNOUT INVENTORY SCORE

	Questions	Group						Mann whitney u-test
		Experiment(n=25)			Control(n=25)			
		Mean	Median	SD	Mean	Median	SD	
P2	How often are you physically exhausted?	45.00	50.00	20.41	56.00	50.00	19.47	**z=2.02 p=0.04*(S)**
P3	How often are you emotionally exhausted?	36.00	25.00	20.51	57.00	50.00	25.54	**z=2.77 p=0.01**(S)**
P5	How often do you feel worn out?	38.00	25.00	27.12	58.00	50.00	25.74	**z=2.42 p=0.02*(S)**
P6	How often do you feel weak and susceptible to illness?	37.00	50.00	22.96	53.00	50.00	15.00	**z=2.63 p=0.01**(S)**
W4	Do you feel worn out at the end of the working day?	41.00	50.00	22.68	56.00	50.00	25.29	**z=2.10p=0.04*(S)**
W5	Are you exhausted in the morning at the thought of another day at work?	36.00	25.00	28.03	53.00	50.00	22.03	**z=2.47 p=0.02*(S)**
W7	Do you have enough energy for family and friends during leisure time?	28.00	25.00	28.25	49.00	50.00	22.22	**z=2.68p=0.01**(S)**
C1	Do you find it hard to work with clients?	33.00	25.00	24.71	51.00	50.00	24.45	**z=2.27 p=0.03*(S)**
C2	Do you find it frustrating to work with clients?	40.00	25.00	28.87	55.00	50.00	26.02	**z=1.97 p=0.05*(S)**
C3	Does it drain your energy to work with clients?	35.00	25.00	27.95	52.00	50.00	26.93	**z=1.96 p=0.05*(S)**
C4	Do you feel that you give more than you get back when you work with clients?	36.00	50.00	24.02	52.00	50.00	21.55	**z=2.17 p=0.03*(S)**

	Total	734.00	775.00	255.65	993.00	1000.00	244.37	**Z=3.48 p=0.001***(S)**

Table 3: PRETEST AND POSTTEST BURNOUT SCORE (experiment)

	Questions	Group						Wilcoxon signed rank test
		Pre			Post			
		Mean	Median	SD	Mean	Median	SD	
P1	How often do you feel tired?	59.00	50.00	21.51	43.00	25.00	21.07	**z=4.04p=0.001***(S)**
P2	How often are you physically exhausted?	55.00	50.00	25.00	45.00	50.00	20.41	**z=2.88 p=0.01**(S)**
P3	How often are you emotionally exhausted?	59.00	50.00	27.84	36.00	25.00	20.51	**z=3.91 p=0.001***(S)**
P4	How often do you think: "I can't take it anymore"	48.00	50.00	23.85	40.00	50.00	23.94	**z=2.82 p=0.01**(S)**
P5	How often do you feel worn out?	47.00	50.00	28.25	38.00	25.00	27.12	**z=3.00 p=0.01**(S)**
P6	How often do you feel weak and susceptible to illness?	54.00	50.00	32.02	37.00	50.00	22.96	**z=3.35 p=0.01**(S)**
W1	Is your work emotionally exhausting?	56.00	50.00	29.12	43.00	50.00	26.54	**z=3.12p=0.01**(S)**
W2	Do you feel burnt out because of your work?	60.00	50.00	27.95	45.00	50.00	27.00	**z=3.42 p=0.001***(S)**
W3	Does your work frustrate you?	55.00	50.00	29.76	42.00	50.00	25.74	**z=3.13 p=0.01**(S)**
W4	Do you feel worn out at the end of the working day?	60.00	50.00	27.00	41.00	50.00	22.68	**z=3.75p=0.001***(S)**
W5	Are you exhausted in the morning at the thought of another day at work?	51.00	50.00	31.85	36.00	25.00	28.03	**z=3.21 p=0.01**(S)**
W6	Do you feel that every working hour is tiring for you?	49.00	50.00	19.74	38.00	25.00	20.56	**z=3.31 p=0.001**(S)**
W7	Do you have enough energy for family and friends during leisure time?	43.00	50.00	36.46	28.00	25.00	28.25	**z=2.98p=0.01**(S)**
C1	Do you find it hard to work with clients?	39.00	50.00	27.08	33.00	25.00	24.71	**z=2.13 p=0.03*(S)**
C2	Do you find it frustrating to work with clients?	54.00	50.00	33.60	40.00	25.00	28.87	**z=2.81 p=0.01**(S)**
C3	Does it drain your energy to work with clients?	49.00	50.00	28.39	35.00	25.00	27.95	**z=2.95 p=0.01**(S)**

C 4	Do you feel that you give more than you get back when you work with clients?	46.00	50.00	27.65	36.00	50.00	24.02	**z=2.88 p=0.01**(S)**
C 5	Are you tired of working with clients?	52.00	50.00	30.55	41.00	50.00	25.90	**z=2.60 p=0.01**(S)**
C 6	Do you sometimes wonder how long you will be able to continue working with clients?	50.00	50.00	36.08	37.00	25.00	27.12	**z=2.43 p=0.02*(S)**
	Total	986.00	990.00	309.82	734.00	775.00	255.65	**Z=4.38 p=0.001***(S)**

No change in the control group was seen on comparing the pre and post test burn out scores.

Table 4: DOMAINWISE PRETEST AND POSTTEST BURNOUT SCORE(Experiment)

Domains	Group						Wilcoxon signed rank test
	Pre-test			Post-test			
	Mean	Median	SD	Mean	Median	SD	
Personal Burnout	322.00	325.00	88.19	239.00	225.00	77.42	**z=4.39 p=0.001***(S)**
Work-related burnout	374.00	375.00	130.20	273.00	250.00	109.19	**Z=4.27 p=0.01**(S**
Client-related burnout	290.00	300.00	129.10	222.00	200.00	115.32	**Z=3.91 p=0.01**(S**
Total	986.00	990.00	309.83	734.00	775.00	255.65	**z=4.38 p=0.001***(S**

There was no statistical significant difference observed domain wise in the control group when pre and post test scores were compared.

Table 5: EFFECTIVENESS OF YOGA AND GENERALIZATION OF PERSONAL BURNOUT SCORE

		Max score	Mean score	% of personal burnout score	Mean Difference of personal burnout score gain score with 95% Confidence interval	Percentage of personal burnout score gain score with 95% Confidence interval
Experiment	Pretest	600	322.00	53.67%	-83.00(67.60 – 98.40)	-13.83%(11.27% – 16.40%)
	Posttest	600	239.00	39.83%		
Control	Pretest	600	322.00	53.67%		

	Posttest	600	329.00	39.83%	7.00(-24.25–10.24)	1.12%(-4.04% – 1.71%)

Table 6: EFFECTIVENESS OF YOGA AND GENERALIZATION OF WORK- RELATED BURNOUT SCORE

		Max score	Mean score	% of work related burnout score	Mean Difference of work related burnout score gain score with 95% Confidence interval	Percentage of work related burnout score gain score with 95% Confidence interval
Experiment	Pretest	700	374.00	53.43%	-101.00(80.69 –123.30)	-14.42%(11.53% – 17.61%)
	Posttest	700	273.00	39.00%		
Control	Pretest	700	349.00	49.86%	14.00(-30.87–2.87)	2.00%(-4.41% – 0.41%)
	Posttest	700	363.00	51.86%		

Table 7: EFFECTIVENESS OF YOGA AND GENERALIZATION OF CLIENT- RELATED BURNOUT SCORE

		Max score	Mean score	% of client burnout score	Mean Difference of client related burnout score gain score with 95% Confidence interval	Percentage of Client related burnout score gain score with 95% Confidence interval
Experiment	Pretest	700	290.00	41.42%	-68.00(46.20 – 89.79)	-9.71%(6.60% – 12.83%)
	Posttest	700	222.00	31.71%		
Control	Pretest	700	291.00	41.57%	10.00(-28.60–8.60)	1.42%(-4.08% – 1.22%)
	Posttest	700	301.00	43.00%		

Table 8: EFFECTIVENESS OF YOGA AND GENERALIZATION OF OVERALL BURNOUT SCORE

		Max score	Mean score	% of burnout score	Mean Difference of burnout score gain score with 95% Confidence interval	Percentage of burnout score gain score with 95% Confidence interval

Experiment	Pretest	1900	986.00	51.89%	-252.00(212.60 –291.40)	-13.26%(11.18% – 15.33%)
	Posttest	1900	734.00	38.63%		
Control	Pretest	1900	291.00	15.32%	-31.00(-62.84– 0.84)	1.63%(-3.30% – 4.42%)
	Posttest	1900	301.00	15.84%		

No association between demographic, client related or work related issues in both the experimental as well as the control groups.

Table 9: Correlation between mean reduction score of Personal burnout score , Work-related burnout score and client -related burnout score (experiment group)

	Correlation between	Mean reduction score Mean±SD	Spearman Correlation coefficients	Interpretation
Experiment group	**Personal burnout reduction score Vs Work-related burnout reduction score**	83.00±37.31 101.00±49.20	r= 0.34 P=0.02*	Fair, positive correlation
	Personal burnout reduction score Vs client -related burnout reduction score	83.00±37.31 68.00±52.80	r= 0.30 P=0.04*	Fair, positive correlation
	Work-related burnout reduction score Vs client -related burnout reduction score	101.00±49.20 68.00±52.80	r= 0.26 P=0.05*	Fair, positive correlation

DISCUSSION:

In our study; we observed that statistically in the experimental group; more positive changes were seen. The overall burnout score reduced significantly in Health Care Workers after administration of yoga practice for 21 days. On comparing the experimental and control group, no difference was seen at baseline for the Burn out scores. Previous studies have stated that mostly women between 18 – 49 years of age were with burnout whereas men were also increasing found to be with burnout. Burnout along with other mental conditions experience major depression for about 8% in Canadian adults.(5) Burnout among the HCW are due to long working hours, lack of infrastructure, lack of leisure time, etc, along with the violence which contributes to the mental stress among them. Previous studies have evaluated the high rate of prevalence of burnout in India due to weaker health infrastructure, scarcity of resources, overburdened health system, and shortage of healthcare providers, and further studies systematic review are needed to find the prevalence of burnout and its associated factors.(6) Various other studies which has evaluated the association between the burnout and satisfaction with work-life integration (WLI) among nurses with the study sample of 8638 nurses and 5198 workers which result in have lower satisfaction with WLI.(7) In HCW's, the Work-related issues can be physical and affect the subject's

musculoskeletal aspect which is due to the bio-mechanical overload, muscle tension and fatigue along with the wrong posture causing a physical injury leading to the chronic degenerative diseases. Along with that we also have psycho – physical distress which affects the well-being. Yoga which is anaerobic and aerobic exercise improves the musculoskeletal aspect, hormonal and metabolic balance. This is achieved through the meditative and psychoanalytic techniques which relaxes and brings the self-awareness, emotional control, cognitive flexibility, increases attention.(8) In a previous study with yoga and burnout, there were no change in the control group was seen on comparing the pre and post-test burn out scores whereas self-care and mindfulness showed a significant improvement in health care workers from pre- to post- intervention, regardless of group with a similar sample size but for the duration of 8 weeks.(9) Other studies have also stated that the mean pandemic-related burnout score was significantly higher than personal and work-related burnout scores, whereas the difference between the personal burnout score and work-related burnout score was statistically significant. More than half (1,069, 52.8%) of the respondents were experiencing pandemic-related burnout.(10) The limitation of the study was the Pandemic situation and one on one interview was not possible along with HCW's being busily engaged in their routine and could not find time for themselves in doing yoga mostly though most of them were highly interested in doing yoga. Daily practise of yoga during the pandemic is mostly not possible for many due to their extreme fatigue and exhaustion with their profession and pathetic situation created during the pandemic. Moreover daily practise will make them stay healthier by having some timing for themselves in their occupation which should be made mandatory by the observation of the Hospital administration.

CONCLUSION:

Yoga is an effective tool in the prevention and management of musculoskeletal and psychological issues. In addition there is an improvement in the psychosomatic wellbeing in the Health Care Workers who practised yoga. Although the data published highlight the full potential and possible benefits derived from these techniques, in order to warrant a widespread diffusion as a daily practice, it would be necessary to broaden the subject further and acquire more robust scientific evidence by designing and implementing research studies equipped with a solid methodological structure on bigger sample groups.

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