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Impact on Health Care in Private Industries and Effects of Combined Exercise training program on cardiopulmonary risk factors among industrial workers

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ABSTRACT:

BACKGROUND: Health is an absolute state of physical, mental, social and spiritual well-being, not just a lack of illness or disease. Every human being has the right to life, to health and to life's necessities, including proper healthcare. OBJECTIVE: To find out the effects of combined exercise training program with ergonomics on cardiopulmonary risk factors among industrial workers. To find out the effects of ergonomics alone on cardiopulmonary risk factors among industrial workers. To compare the effects of combined exercise training program with ergonomics and ergonomics alone on cardiopulmonary risk factors among industrial workers. METHODOLOGY: The study was designed as Randomized control trial. Participants from various Private Industries were randomly identified with some health criteria of inclusion and exclusion in the sample. Sample size required for the study was calculated as 300 and it was calculated using the formula 4 pq/l ^{2} (prevalence of 50% and relative precision of 20% was considered for sample size calculation at 95% confidence level). Group-A: Experimental (Participants received Combined Exercise training Program along with ergonomics training) Group-B: Control (Participants received ergonomics training alone) RESULT ANALYSIS: All the subjects of the groups were tested before and after experimental period on selected criterion variables. Analysis of variance (ANOVA) was applied on each criterion variables. Analysis of Data The influence of independent variables on the selected criterion variable was determined by subjecting the collected data to the analysis of variance Level of Significance. CONCLUSSION: The Study shows impact on health care in private industries and effects of combined exercise training program on cardiopulmonary risk factors among industrial workers. These results are further calculated accurately using ANOVA test and their F rations are derived.

KEY WORDS: cardiopulmonary risk, private industries, ergonomics.

INTRODUCTION:

Health is an absolute state of physical, mental, social and spiritual well-being, not just a lack of illness or disease. Every human being has the right to life, to health and to life's necessities, including proper healthcare. The 1948 UN Universal Declaration of Human Rights states thereby: "Everyone shall have the right to live in a state adequate to his or her health and well-being, including food , clothing, homes, healthcare and social security in the event of joblessness, illness, handicapping, widowhood and age, or other circumstantial lack of living standards. "Every human being without a destination of race, religion, politics, belief, economic or social condition is fundamental in enjoying the highest attainable standard of health." The services sector is now recognized as a key area for economic good. Service consumption is today a critical demand. Consumption of such services is, for example, essential, as education, medical care, municipal services, transport and communication, tourism, entertainments and sports. Event management and media services with key sports and cultural events keep millions of people exciting, generate huge income and dramatically contribute to the economic growth of these countries and states. Thus, the focus on consumers has moved greatly from increasing physical goods consumption to higher services consumption. After basic needs have been fulfilled, consumers appear to be seeking more services than goods, and higher living standards generally mean increased services consumption rather than increased consumption of goods on their own.

Health care system refers to the organization and delivery of health care services to meet target population health needs of individuals, institutions and resources. The WHO calls all activities that are aimed mainly at promoting, restoring or maintaining health. The World Bank (WB), with factors related to public health like poverty, education, infrastructure, and also the political and social environment, has made the health system a broader definition.

Cardiovascular disorders have been the killer of one-fifth of deaths in the world's new globalized scenario in India because of a changing lifestyle. India not only has a heavy burden on the working population aged between 35 and 65 years of age of cardiovascular diseases (CVDs) but also the impact these diseases have on individuals , households, and society. The leading cause of non-communicable diseases in India is cardiovascular diseases. The country with tremendous variations in the prevalence and risk factors of non-communicable diseases has considerable disparities. The WHO estimates that 60 percent of heart patients worldwide will be Indians before 2020. By 2020 Regional studies have also shown that the primary cause of death in urban and rural communities is cardiovascular disease.

Hypertension or elevated blood pressure is the leading risk factor for mortalityand is contributing to i ncreased risk of cardiovascular disease (CVD). Hypertension, however, is also one of the most significant query able risk factors in cardiovascular disease prevention. With hypertension prevalence rates of approximately 29 % of the US population and its expected continuing rise, hypertension and cardiovascular disease incidence are a critical health concern. Hypertension is, however, also one of the key risk factors for cardiovascular disease prevention. With a prevalence of high blood pressure in the United States population of approximately 29% and its expected continued rise, hypertension reduction and the risk of cardiovascular disease are a vital health issue. Changes to lifestyles often reflect changes in diet and exercise habits. The American College of Sports Medicine (ACSM), the American Heart Association and others have all given guidelines for therapeutic activity for people with high blood pressure. However, aerobics is the subject of the bulk of these guidelines. There are well known health benefits of aerobic exercise but little data exist on the health benefits of resistance, in particular cardiovascular disease in individuals with high blood pressure. Recent analyses and Meta-analyses have also shown that both aerobic and resistance can substantially decrease blood pressure. Furthermore, there is a wide variety of demographics and co-morbidities involved in researching combination training, multiple exercise treatments and scheduling, and those with a particular emphasis on lowering blood pressure. The combination of aerobics and resistance may have an abdicative impact and minimize the risk of CVD risk factors further. However, many of the combined training studies do not have an aerobic or resistance group or are not randomized well-controlled. In people at high risk of developing CVD with elevated blood pressure or hypertension, an aerobium and resistance exercise combination exercise resulted in increased diastolic blood pressure, lean body mass, and increased strength and endurance, although a workout lasting only 8 weeks was required. Furthermore, the evidence indicates that combination education can be better than either aerobic training or resistance training alone, as the combination of risk factors appears to have the most beneficial impact.

METHODOLOGY:

The study was designed to analyse the impact of combined exercise training program with ergonomics and ergonomics alone on cardiopulmonary risk factors among industrial workers. The following procedure was adopted. The study was designed as Randomized control trial. Participants from various Private Industries were randomly identified with some health criteria of inclusion and exclusion in the sample.

Total 9 industries were selected through the lottery method for this study and all participants were screened through medical camp whereas the Cardio pulmonary risk factors were identified through this screening process. Study participants were selected according through the selection criteria and were Allocated in two groups. Group-A: Experimental (Participants received Combined Exercise training Program along with ergonomics training). Group-B: Control (Participants received ergonomics training alone). Participants were included as Industrial workers from private industries Office clerks/professionals (clerical staff, architects, engineers, surveyors, management level staff, safety officers and technicians)., ≥20 years of age, have permanent job for more than 5 years, Willing to participate, and being able to communicate.

Data collection Procedure: All potential participants were selected according through random sampling. Industrial workers from the private sectors were participated in the study. Written consent were obtained from each individual prior to the study. Study participants were verbally informed of their right to withdraw from the study at any stage, or to omit their data from the analysis. In addition participants received a written copy of their rights during and following the completion of the study

Outcome measures: The data is collected on the following demographic, physiological factors and biochemistry (responsible for cardiovascular diseases)

Treatment procedure:
combined exercise training: Group A received industrial based combined exercise trainingIndustrial based combined exercise training protocol includes.Modified aerobics includes warm up phase, conditioning phase, and cool down phase.Diaphragmatic breathing exercise and abdominal strengthening exercise.Relaxation therapy includes yoga with meditation.Ergonomics / postural correction. Modified aerobics consist of: Warm up Phase, Conditioning Phase, Cool down Phase, Warm up phase (which includes stretching for Tendo Achilles, Calf, Hamstrings and Active free exercise for both upper and lower extremity for a 15 second hold, each three repetition for total 5 minutes). Conditioning phase were trained through brisk walking for total 10 minutes and cool down phase were continued through marching on floor and active free exercise in both extremities for total 5 minutes.

Diaphragmatic breathing exercise. To perform this exercise while sitting in a chair. Participants were asked to sit comfortably, with knees bent with shoulders, head and neck relaxed. All were asked to breathe in slowly through their nose so that their stomach moves out against their hand. The hand on their chest should remain as still as possible. Placed one hand on upper chest and the other just below rib cage. This will allow feeling diaphragm move as they breathe. Tighten the stomach muscles, letting them fall inward as they exhale through pursed lips. The hand on their upper chest must remain as still as possible. This were performed for 5 minutes.

Relaxation therapy includes yoga with meditation (pranayama) for total 15 minutes. The three parts refer to the belly, ribs and chest were made them to follow these simple steps to explore this breathing technique. Find a comfortable place to sit or lie down, close your eyes, let go of tension in the body. Bring awareness to your natural breath, observe your inhale and exhale as you breathe through your nose. Slowly lengthen your inhale. Expand your belly as you inhale – filling it up like a balloon. As you exhale, slowly expel the air out from your belly and draw your navel towards your spine to empty. Repeat long, slow belly breaths a few times to get the hang of it. On the next inhale, fill the belly as before. When the belly is full, continue to fill the rib cage, allow the ribs to expand in all directions.On the exhale, let the air go first from the rib cage, letting the ribs come closer together, then from the elly. Practice breathing first into the belly and then the rib cage a few times. On the next inhale, expand the belly, then the ribs. When they are full continue to fill the chest. Imagine your heart is right in the middle of your breast bone and you are breathing into and

expanding your heart. On the exhale, let the breath go first from the upper chest, then from the ribs and lastly the belly. Therefore the rhythm is as follows: Inhale: 1-belly, 2-ribs, 3-chest; Exhale: 1-chest 2-ribs, 3-belly.This session last for 15 minutes. Total treatment session carries 40 minutes in three days a week for total six months. Pre and post measurement will be taken before and after finishing the treatment session.

Ergonomic advice: Ergonomics is the process of designing or arranging workplaces, products and systems so that they fit the people who use them. Ergonomics applies to the design of anything that involves people-workplace, sports and leisure, health and safety. It is a branch of science that aims to learn about human abilities and limitations and then apply this learning to improve people's interaction with products, systems and environments. Ergonomics aims to improve workspaces and environments to minimize the risk of injury or harm. So as technologies change, so too does the need to ensure that the tools we access for work, rest and play are designed for our body's requirement.

RESULT ANALYSIS

Statistical analyses of Data: The following table represents the descriptive of the data collected from the 300 industrial workers before providing them any training.

Table 1: Analysis of Demographic Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
age	300	22	39	29.08	5.222

Gender	Frequency	Valid Percent
Males	183	61.0
Females	117	39.0
Total	300	100.0

The data shows the average age of the workers was 29 years with a minimum age of 22 years and a maximum age of 39 years. Only those workers were selected in the sample who had age more than 20 years.in our sample of 300 there were 183 males (61%) and 117 females (39%) which means there were more males then females in the sample.

Table 2: Analysis of Physiological variables

	N	Minimum	Maximum	Mean	Std. Deviation
Systolic BP	300	120	150	134.32	11.008
body mass index	300	22.5	34.4	29.052	3.0873
waist hip ratio	300	.64	.99	.9059	.07991
Fasting sugar	300	110	135	121.19	8.024
Total cholesterol	300	180	245	230.97	10.792
Triglyceride	300	210	280	249.04	19.701
High density lipoprotein	300	27	59	38.13	6.385
peak expiratory flow	300	305	550	412.68	59.004
physical activity	300	250	380	323.04	34.506
Valid N (list-wise)	300				

All the above results it shows that there is prevalence of cardio vascular diseases risk factors among the industrial worker as all the risk factors are either below the normal or above the normal range. After

examining the prevalence of risk factors among the industrial workers. The sample of 300 workers was randomly divided into groups. First with 140 workers who received ergonomics only and another group who received combined exercise training with 160 workers. Impact of ergonomics on the risk factors of cardiovascular diseases. The 140 workers undergone ergonomic advice. And then to examine the effect of ergonomics ta comparison is made between their previous values (pre-test) and post-ergonomics results. Following are the results from the comparative analysis.

Between and within group comparison of Systolic Blood Pressure on Impact of ergonomics

		Sum of Squares	df	Mean Square	F	Sig.
Systolic BP	Between Groups	4282.232	1	4282.232	41.755	.000
	Within Groups	28510.536	278	102.556		
	Total	32792.768	279			

The obtained F ratio 41.755 for post-test was significant at <0.05 at significance level. The above analysis of the study indicates that there is a significant difference between pre-test and post-test means of the two groups.

Between and within group comparison of Body mass index on Impact of ergonomics

		Sum of Squares	df	Mean Square	F	Sig.
body mass index	Between Groups	630.000	1	630.000	65.308	.000
	Within Groups	2681.771	278	9.647		
	Total	3311.771	279			

The obtained F ratio 65.308 for post-test was significant at <0.05 at significance level. The above analysis of the study indicates that there is a significant difference between pre-test and post-test means of the two groups.

Between and within group comparison of Waist hip ratio on Impact of ergonomics

		Sum of Squares	df	Mean Square	F	Sig.
Waist hip ratio	Between Groups	.175	1	.175	25.186	.000
	Within Groups	1.932	278	.007		
	Total	2.107	279			

The obtained F ratio 25.186 for post-test was significant at <0.05at significance level. The above analysis of the data indicates that there is a significant difference between pre-test and post-test means of the two groups.

Between and within group comparison of Fasting Sugar on Impact of ergonomics

		Sum of Squares	df	Mean Square	F	Sig.
fasting sugar	Between Groups	7000.000	1	7000.000	108.631	.000
	Within Groups	17913.871	278	64.438		

	Total	24913.871	279			

The obtained F ratio 108.631 for post-test was significant at <0.05 at significance level. The above analysis of the data indicates that there is a significant difference between pre-test and post-test means of the two groups

Between and within group comparison of Total cholesterol on Impact of ergonomics						
		Sum of Squares	df	Mean Square	F	Sig.
Total cholesterol	Between Groups	15750.000	1	15750.000	129.210	.000
	Within Groups	33886.800	278	121.895		
	Total	49636.800	279			

The obtained F ratio 129.210 for post-test was significant at <0.05 at significance level. The above analysis of the data indicates that there is a significant difference between pre-test and post-test means of the two groups.

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Between and within group comparison of Triglyceride on Impact of ergonomics						
		Sum of Squares	df	Mean Square	F	Sig.
triglyceride	Between Groups	63000.000	1	63000.000	165.003	.000
	Within Groups	106143.586	278	381.811		
	Total	169143.586	279			

The obtained F ratio 165.003 for post-test was significant at <0.05at significance level. The above analysis of the data indicates that there is a significant difference between pre-test and post-test means of the two groups.

Between and within group comparison of Peak expiratory flow on Impact of ergonomics

peak expiratory flow	Between Groups	28000.000	1	28000.000	8.287	.004
	Within Groups	939272.271	278	3378.677		
	Total	967272.271	279			

The obtained F ratio 8.287 for post-test was significant at <0.05at significance level. The above analysis of the data indicates that there is a significant difference between pre-test and post-test means of the two groups.

Between and within group comparison of Waist hip ratio on Impact of combined exercise

		Sum of Squares	df	Mean Square	F	Sig.
WHR	Between Groups	.800	1	.800	135.038	.000
	Within Groups	1.884	318	.006		
	Total	2.684	319			

The obtained F ratio 135.038 for post- test was significant at <0.05at significance level. The above analysis of the data indicates that there is a significant difference between pre-training and post-training means of the two groups

Between and within group comparison of Fasting sugar on Impact of combined exercise

		Sum of Squares	df	Mean Square	F	Sig.
Fasting sugar	Between Groups	12877.813	1	12877.813	268.518	.000
	Within Groups	15250.937	318	47.959		
	Total	28128.750	319			

The obtained F ratio 268.518 for post- test was significant at <0.05at significance level. The above analysis of the data indicates that there is a significant difference between pre-training and post-training means of the two groups.

Between and within group comparison of Total cholesterol on Impact of combined exercise

		Sum of Squares	df	Mean Square	F	Sig.
Cholesterol	Between Groups	128000.000	1	128000.000	1139.555	.000
	Within Groups	35719.200	318	112.325		
	Total	163719.200	319			

The obtained F ratio 1139.5 for post- test was significant at <0.05at significance level. The above analysis of the data indicates that there is a significant difference between pre-training and post-training means of the two groups.

Between and within group comparison of Triglyceride on Impact of combined exercise

		Sum of Squares	df	Mean Square	F	Sig.
Triglyceride	Between Groups	236531.250	1	236531.250	616.024	.000
	Within Groups	122100.737	318	383.965		
	Total	358631.988	319			

The obtained F ratio 616.02 for post- test was significant at <0.05at significance level. The above analysis of the data indicates that there is a significant difference between pre-training and post-training means of the two groups.

Between and within comparison of High density lipoprotein on Impact of combined exercise

		Sum of Squares	df	Mean Square	F	Sig.
HDL	Between Groups	17790.613	1	17790.613	426.303	.000
	Within Groups	13270.875	318	41.732		
	Total	31061.488	319			

The obtained F ratio 426.303 for post- test was significant at <0.05at significance level. The above analysis of the data indicates that there is a significant difference between pre-training and post-training means of the two groups.

Between and within comparison of Peak expiratory Flow on Impact of combined exercise

		Sum of Squares	df	Mean Square	F	Sig.
PFER	Between Groups	32000.000	1	32000.000	8.940	.003
	Within Groups	1138253.950	318	3579.415		
	Total	1170253.950	319			

The obtained F ratio 8.940 for post- test was significant at <0.05at significance level. The above analysis of the data indicates that there is a significant difference between pre-training and post-training means of the two groups.

Between and within group comparison of Physical activity on Impact of combined exercise

		Sum of Squares	df	Mean Square	F	Sig.
physical activity	Between Groups	800000.000	1	800000.000	683.860	.000
	Within Groups	372005.887	318	1169.830		
	Total	1172005.887	319			

The obtained F ratio 683.860 for post- test was significant at <0.05at significance level. The above analysis of the data indicates that there is a significant difference between pre-training and post-training means of the two groups.

Comparison between the ergonomics alone with combined exercise training Program:

Among 300 sampled workers of the study, participants were divided in two groups of 140 and 160 who received ergonomics alone and combined exercise training program respectively. To find out which technique is most impactful for reducing the risk factors of cardiovascular diseases among the industrial workers, the data collected from the two groups for all the risk factors after receiving the training programs was compared through the statistical analysis. The results are as follows-

Between and within group comparison of Waist hip ratio on Impact of ergonomics alone with combined exercise

		Sum of Squares	df	Mean Square	F	Sig.
waist hip ratio	Between Groups	.155	1	.155	24.222	.000
	Within Groups	1.908	298	.006		
	Total	2.063	299			

The obtained F ratio 24.222 was significant at <0.05at significance level. The above analysis of the data indicates that there is a significant difference between ergonomic group and combined training group.

Between and within group comparison of Fasting sugar on Impact of ergonomics alone with combined exercise

		Sum of Squares	df	Mean Square	F	Sig.
fasting sugar	Between Groups	687.691	1	687.691	14.719	.000
	Within Groups	13923.029	298	46.722		
	Total	14610.720	299			

The obtained F ratio 14.719 was significant at <0.05at significance level. The above analysis of the data indicates that there is a significant difference between ergonomic group and combined training group.

Between and within group comparison of Total cholesterol on Impact of ergonomics alone with combined exercise

		Sum of Squares	df	Mean Square	F	Sig.
Total cholesterol	Between Groups	44818.667	1	44818.667	383.759	.000
	Within Groups	34803.000	298	116.789		
	Total	79621.667	299			

The obtained F ratio 383.759 was significant at <0.05at significance level. The above analysis of the data indicates that there is a significant difference between ergonomic group and combined training group.

Between and within group comparison of Triglyceride on Impact of ergonomics alone with combined exercise

		Sum of Squares	df	Mean Square	F	Sig.
triglyceride	Between Groups	44723.983	1	44723.983	118.795	.000
	Within Groups	112191.537	298	376.482		
	Total	156915.520	299			

The obtained F ratio 118.795 was significant at <0.05at significance level. The above analysis of the data indicates that there is a significant difference between ergonomic group and combined training group.

Between and within group comparison of High density lipoprotein on Impact of ergonomics alone with combined exercise

		Sum of Squares	df	Mean Square	F	Sig.
High density lipoprotein	Between Groups	3697.972	1	3697.972	93.942	.000
	Within Groups	11730.575	298	39.364		
	Total	15428.547	299			

The obtained F ratio 93.942 was significant at <0.05at significance level. The above analysis of the data indicates that there is a significant difference between ergonomic group and combined training group.

Between and within group comparison of Peak expiratory flow on Impact of ergonomics alone with combined exercise

		Sum of Squares	df	Mean Square	F	Sig.
peak expiratoryflow	Between Groups	2210.526	1	2210.526	.634	.426
	Within Groups	1038763.111	298	3485.782		
	Total	1040973.637	299			

The obtained F ratio.634 was not significant at <0.05at significance level. The above analysis of the data indicates that there is no significant difference between ergonomic group and combined training group.

Between and within group comparison of Physical activity on Impact of ergonomics alone with combined exercise

		Sum of Squares	df	Mean Square	F	Sig.
physical activity	Between Groups	466194.821	1	466194.821	390.317	.000
	Within Groups	355931.365	298	1194.401		
	Total	822126.187	299			

The obtained F ratio 390.317 was significant at <0.05at significance level. The above analysis of the data indicates that there is a significant difference between ergonomic group and combined training group.

Discussion:

This research studies about impact on health care in private industries and effects of combined exercise training program on cardiopulmonary risk factors among industrial workers. To achieve this purpose of the study three hundred industrial and private workers in Chennai area were selected as subjects at random and divided into two groups namely combined training program Group (I) as experimental group and ergonomic Group (II) as control group. Analysis of Variance (ANOVA) has been applied to each variable criterion. Data analyses is done by an analysis of variance has been carried out by submitting the collected data for the impact of independent variables on the variable criterion. Initially, Impact of ergonomics on the risk factors of cardiopulmonary is studied. For this, 140 workers undergo ergonomic advice and then to examine the effect of ergonomics a comparison is made between their previous values (pre-test) and post-ergonomics results. First of all, Systolic Blood Pressure is studied for these workers and it is found that the post ergonomic results show lower average blood pressure of the workers than their previous values i.e. from 134.25 to 125.43. Further, with the help of ANOVA test, F ratio is carried out for these outcomes and it shows <0.05 significance level. i.e. 41.755. Next, Body mass index was studied and it shows that the post ergonomic results shows lower average body mass index of the workers than their previous values. i.e from 29.07 to 26.07 and by using ANOVA, F ratio 65.308 is obtained for post-test and it was significant at <0.05 at significance level. Next, Waist hip ratio is calculated and it shows lower average waist hip ratio of the workers than their previous values i.e. from .90 to .85With ANOVA test , F ratio 25.186 for post-test was significant at <0.05at significance level was obtained. Further, Fasting Sugar level was checked and results shows lower average fasting sugar of the workers than their previous values i.e. from 121.38 to 111.3, with ANOVA test, F ratio 108.631 is obtained with <0.05 at significance level. Further, Total cholesterol level was checked, shows decrease in value i.e. from 237.70 to 215 and with ANOVA test, F ratio of 129.210 was calculated. Triglyceride is also tested and its shows drastic decrease in pre results and post ergonomics results i.e. from 249.09 to 218.06 and by ANOVA test, F ratio 165.003 for post-test was obtained at <0.05 at significance level. High density lipoprotein test shows significant increment in the value due to ergonomics i.e. from 38.6 to 43.3. The F ratio of 90.031 for post-test was obtained at <0.05 at significance level. Peak expiratory flow is studied and it shows significant increase in post ergonomic values i.e. from 415.48 to 433.58. F ratio of 8.287 was obtained at <0.05 at significance level. Physical activity shows increment in the outcomes i.e. from 415.48 to 433.58 and F ratio of 8.287 is obtained. Thus, different physical parameters are studied and their impacts are recorded. Some parameters have shown increment while others have shown decrement from pre ergonomic values and using ANOVA test, F rations were calculated. This outcomes emphasize the effects of ergonomic activities results into increase in physical activities as well as expiratory flow and lipoprotein also increases while triglyceride, cholesterol level, fasting sugar, waist hip ratio, body mass index as well as blood pressure decreases. Thus, this research shows the importance of ergonomic activities in order to improve our bodily health as well as physical endurance.

Limitations of the study:

Though this research work has covered wider portions regarding impact on health care in private industries and effects of combined exercise training program as well as ergonometric activities on cardiopulmonary risk factors, there are certain limitations seen in this research work i.e. the causes of the relationship between CVD and shift work were only partially discussed. Of three major pathways proposed for CVD in shift workers, only one route has been detailed. The literature focuses on changes in the life style, and variations in smoke and diet, though alcohol and exercise habits are not important, seem to be important. Life-style does not seem to account for much, however, and because of these factors of life-style, which are based on culture, one explanation may be because of the conflicting results on alcoholic beverages, diet and exercise which thus leads to different changes in the way workers are moved in different countries. There was very little exposure to other routes, shifts in the circadian rhythm and social disturbance. Ideally, research should integrate awareness about CVD risk factors and should not monitor information about factors that are important for relationship mediation. Primary risk factors have also been viewed as confusing, but they can be treated as mediating ties and as part of a causal Network, for example as tobacco use, higher due to shift work. The issue of social support, stress and sleepiness was not examined at all despite the fact that they are both common effects and risk factors for CVD.

Conclusion:

This research work studies about impact on health care in private industries and effects of combined exercise training program on cardiopulmonary risk factors among industrial workers. Impacts of ergonometric activities for workers were calculated and it shows that factors like blood pressure, cholesterol, sugar, the waist hip ration etc. are found to be decreased while lipoprotein , physical activity as well as expiratory flow increases. These results are further calculated accurately using ANOVA test and their F rations are derived. Thus, this entire study shows the impact of the ergonometric activities on health of corporate workers. A dose-response relationship is studied and it gives an overall impression thatCVD-related shift work increases the risk between men and women by about 40 percent.We may reject the hypothesis that there is no significant impact of ergonomics alone on the cardiovascular diseases risk factors among industrial workers as there is a significant impact found on the industrial workers.

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