

**An Empirical Study on Factors influencing Occupational Stress among
Doctors in Salem and Dharmapuri Districts of Tamil Nadu****¹Dr. K. Selvavinayagam****²M. Vidhusha****Abstract**

The profession of doctors is much complicated when it assessed from the point of nature of job. The various job nature evokes various types of stress levels based on the mental and physical strengths of the people. The doctors professions is very tough task which involves saving the life of the people and it involves high level of risk and stress involved with it. The study was done to identify the various factors that are influencing the occupational stress of the doctors and impact of these factors on the physical stress of the doctors. The study was conducted with the help of primary data and data was collected using the well structured questionnaire. The data was collected from 467 doctors who are working in the study area of Salem and Dharmapuri districts of Tamil Nadu. The various statistical tools of the study are percentage analysis, factor analysis and regression analysis. The various factors that are involved in the occupational stress of the doctors are Family environment factor, Work environment factor, Social environment factor, mental effect of stress and physical effect of stress. The influence of family environment, work environment, social environment and mental environment tend to affect the physical stress of the doctor which is explained by the regression values. The physical effect of stress is explained to 63 percent by the independent variables. The study concluded that the doctors have to be provided with peaceful environment at the workplace and family to enhance the work efficiency of doctors.

Keywords :Occupational Stress, Doctors, Physical Stress of Doctors

Introduction

The profession of doctor is considered to be a noble profession all over the world. They are dealing with the lives of the people and are facing lot of societal issues in the work environment. The profession was insisted as a service to the benefit of poor and who are at

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the need of medical intervention. This was subjected to various evolutions under various time periods which has made the profession into business activity. The doctors are still humanitarian even under the business type of profession. The doctors are undergoing lot of technicalities that they have to obtain to practice the profession. The times have changed and doctors have been brought into the fold of business due to expenses incurred in the education. The income also replicates the expenses when do it as business. There are lot changes in the field of medicines after the modernization of the medicine. The innovation of new diseases and drugs has much complicated the field of medicines. The medicinal fields has undergone vibrant evolution and helped to diverse the field of operation. The specialization in the field has evolved in the current century. This has enabled to liberalise the medicine and helped for formation of hospital services in business form. There has been lot of innovation made in the field and it has created different segments in the hospitals. The human body requires specialized treatments according to the field of illness. This has been marketed widely by the medical practitioners in the current form of business activity. The sector has been widely transforming into business oriented activity from the people's point of view. The survival of the doctors is primarily based on the curing ability of them from the illness. The ability of the doctor will determine the efficiency and its impact on the patients. This will have effect on the minds of the doctor to improve their ability for curing the illness.

Review of Literature and Research Gap

The occupational stress is widely researched topic all over the world in various fields of occupation. The doctor field is very much related to the science field and qualitative study on this filed is rarity. The studies that has focused on the social science area deals with the various aspects of the job satisfaction of the doctors³. The prime focus of majority of the studies have analysed the various aspects of job like expectation, satisfaction and perception of the doctors towards the job. There are studies which have focused on the occupational stress of the doctors theoretically without empirical testing⁴. The studies have failed to attract the empirical testing of the components of the involved in the occupational stress of the doctors. The papers have focused on the theoretical and practical challenges of the doctors in

³ Alexandros Stamatios G. Antoniou and Marilyn J. Davidson, "Occupational Stress, Job Satisfaction and Health State in Male and Female Junior Hospital Doctors in Greece, *Journal of Managerial Psychology* , Vol. 18(6), pp. 592-621

⁴ Monika Bernburg, Karin Vitxthum, David A. Groneberg and Stefanie Mache (2016), "Physicians occupational stress, depressive symptoms and work ability in relations to their working environment: A Cross- Sectional study of differences among medical residents with various specialities working in German Hospitals, *BMJ Open*, Vol . 6(6), retrieved from <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4916614/>

the world⁵. The papers have vastly concentrated on the diverse problems in relation to the practice of medicine. The other papers that have been reviewed also not aimed at the measurement of occupational stress but aimed at measuring the job satisfaction of the doctors⁶. These studies have failed to focus particularly on the occupational stress of the doctors. The study aims to focus on the stress that are being undergone by the doctors involved in this profession.

Statement of the Problem

The medical sector is undergoing lot of changes in the country structurally and financially. There are different branches for different parts of the human body. The studies are now being upgraded from period to period to keep the doctor about the illness that arrive new to the field. There are specific studies that are to be done by the doctors to make treatment for specific fields. The doctors are kept on heels to keep their knowledge updated to face the challenges of ever growing illness in the country. There speciality hospitals which are looking only for specialists for specific branches of treatment that have better scope for employment. The study involved to keep them updated and further studies add to their economic burden which in-fact mainly brings out occupational stress for the doctors. The various areas of studies to get them equipped adds to the stress. Then work environment of the hospitals and various difficulties faced at the hospitals makes the doctor stressed. There are also non-availability of the specific equipments for carrying out the specific treatment for the patients makes the doctors frustrated at the job on emergency conditions. There are various issues that are adding to the occupational stress of the doctors it may create an impact of the treatment that they give to the patients and it may also affect the personal life of the doctors. These diverse problems have to be studied to individually to assess the stress faced by the doctors in the occupation.

Importance of the Study

The doctors are the backbone of the living standards of people in the country. The doctors are responsible for the lifestyle of the citizens and they help to maintain the medical requirements of the people. The sector contributes 2 percent towards the Gross Domestic

⁵ Jean-Louis Denis and Nicolette Van Gestel (2016), "Medical Doctors in Healthcare Leadership: Theoretical and Practical Challenges, *BMC Health Services Research*, 16, 158 doi:10.1186/s12913-016-1392-8

⁶ Sharmistha Bhattacharjee, Kuntala Ray, Jayanta Kumar Roy, Abhijit Mukherjee, Hironmoy Roy and Saikat Datta, "Job Satisfaction among doctors of a Government Medical college and hospital of Eastern India, *Nepal Journal of Epidemiology*, Vol. 6(3), doi: 10.3126/nje.v6i3.14762

Product (GDP) and 12 percent towards the manufacturing sector⁷. The sector is working actively towards the contribution of the economic development of the country. The sector has been the hotspot for the medical tourism in the world. There are patients from countries across the world to India for best and fair prices of medical treatment of the country. The various treatments provided and quality of treatment explains the efficiency of the sector in the country. The study of occupational stress among the doctors is significant that contributes to the economic development and medical tourism of the country. The well being of the doctors are vital for treating the patients efficiently. This will attract not only patients but also foreign direct investment in the country. The quality of the treatment has to be of top standards to attract and retain the patients who are coming from world countries. The treatment is based only on the efficiency of the doctors and they are to be provided with stress free environment at the work place. The study aims at identifying the major factors that are creating and influencing the occupational stress of the doctors.

Objectives of the Study

- a. To identify the various factors that is influencing the occupational stress of the doctors in the study area.
- b. To examine the impact of factors influencing the stress among the respondents and its impact on physical stress

Research Design

The research design of the study explains the various processes adopted in solving the research problem of the study. The study which aims to find out the occupational stress of the doctors is empirical in nature. The observations are based on the behavior of the doctors and how they react about the stress at the work environment. The study is based on the primary data and was collected using structured questionnaire. The sample has selected a sample size of 500 for the study out of which 467 were found to be suitable. The sample size is calculated based on the Z s sample size calculator using the population size of 1173 doctors with 5 percent error term. The results of the sample size was 399 and to have better reliability the size of the sample was increased to 500 and questionnaire was given to the doctors. The area of the study was Salem and Dharmapuri Districts of Tamil Nadu. The statistical tools used in the study were percentage analysis, factor analysis and regression analysis. The following is the result of the reliability study carried out for the questionnaire of the study.

⁷ Gulsan Akhtar, "Indian Pharmaceutical Industry : An Overview", *IOSR Journal of Humanities and Social Sciences*, Vol. 13(3), pp. 51-66.

Table – 1
Reliability Statistics

Reliability Statistics	
Cronbach's Alpha	Number of Factors
0.763	5

Limitations of the study

- The doctors were hesitant in giving personal details about the profession which may cause some job insecurity for them if it goes to the knowledge of the employers.

Analysis and Interpretations

The following explains about the various demographic characteristics of the doctors involved in the study and their role in the occupational stress of the doctors working in the Salem and Dharmapuri Districts of Tamil Nadu

Table – 2
Demographic Profile of the Respondents

Demographics	Category	Frequency	Percent
Gender	Male	335	71.70
	Female	132	28.30
	Total	467	100.00
Age	Upto 30 Years	110	23.60
	31-40 Years	248	52.10
	41-50 Years	22	4.70
	>50 Years	87	18.60
	Total	467	100.00
Professional Education	MBBS	100	21.40
	MS	325	69.60
	MD	33	7.10
	Others	9	1.90
	Total	467	100.00
Nature of Family	Nuclear	129	27.60
	Joint	338	72.40
	Total	467	100.00
Number of Dependent Members	Up-to 2 Members	248	53.10
	3-4 Members	191	40.90
	5-6 Members	25	5.40
	Above 6 Members	3	0.60
	Total	467	100.00

(Source: Primary Data)

The demographics profile of the respondents reveals that majority of the doctors are male respondents involved in the study. The age of the respondents have explains that majority of them are belonging to the category of 31-40 years. The majority of the doctors have educational specialization of MS with 69.60 percent. The nature of family reveals that majority of the doctors are living in joint family type with 72.40 percent opting that style of family. There are minimum 2 dependent members who are living with the doctors involved in the study which is explained by the opinions of 53.10 percent of the respondents.

Table – 3
Attributes of Doctors

Demographics	Category	Frequency	Percent
Total Experience	Upto 5 years	169	36.2
	6 to 10 years	207	44.3
	11 to 15 years	71	15.2
	Above 15 years	20	4.3
	Total	467	100.0
Monthly Income	Upto Rs.50000/=	30	6.4
	Rs50001/- to Rs. 75000/=	285	61.0
	Rs.75001/-to Rs.100000/=	25	5.4
	> Rs.100000/=	127	27.2
	Total	467	100.0
Nature of Present Post	Doctor General Medicine	150	32.1
	Duty Doctor	296	63.4
	Surgeon	9	1.9
	Anesthesia Doctor	0	0
	ENT Specialist	8	1.7
	Others if any	4	.9
	Doctor General Medicine	150	32.1
	Total	467	100.0
Unit of Working	Primary Health Centre	182	39.0
	Government Hospital	278	59.5
	Medical College	4	0.9
	Own Sanatorium	3	0.6
	Total	467	100.0
Working Hours	8 Hours per day	362	77.5
	12 Hours per day	92	19.7
	18 Hours	6	1.3
	24 Hours (Full duty)	7	1.5
	Total	467	100.0
Distance between Residence and Working Unit	Less than 10 Kms	39	8.4
	11- 20 Kms	318	68.1
	21-30 Kms	12	2.6
	Above 30 Kms	98	21.0
	Total	467	100.0

(Source: Primary Data)

The attributes of the doctors explains about the work experience, income, nature of the job to know the work patterns of the doctor. The total experience of the doctors explains

that majority belong to the category of 6-10 years with 44.30 percent of them opting it. The monthly income of the respondents reveals that the majority of them are earning up-to Rs. 50,001 to Rs. 75,000 (61 percent). The doctors involved in the study are majorly working on the nature of duty doctor in the study area which is revealed by 63.40 percent. There are 59.50 percent of them working in the government hospital. The working hour per day stands at 8 hours with 77.50 percent of the doctors revealing the same. The distance between residence and working units of the doctors seems to be 11-20 Kms.

Factors influencing Occupational Stress of Doctors

Factor Analysis is a multivariate tool which is being used in various field like psychology, education, social sciences, health sciences ...etc. It is used to reduce the number of variables initially considered in the study, to identify the structural relationship between the variables, to assess the unidimensionality and multicollinearity and finally to prove and disprove the theories already framed in social sciences.

In the factor analysis, the relationship between the variables could be determined by correlation matrix. Hence in this study, the researcher has done the correlation matrix for the variables taken up for consideration to categorize the factor loading through rule of thumb and the result revealed with the value of "R" is tabulated below in Table 4

Table 5- Table showing the value of Kaiser –Meyer-Olkin and Bartlett's Test

KMO and Bartlett's Test		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		0.790
Bartlett's Test of Sphericity	Approx. Chi-Square	1597.789
	df	467
	Sig.	<0.001**

The Kaiser-Meyer-Olkin test was conducted and the value was found to be 0.790 which showed that the factors taken up for measuring the stress level among the respondents have explained the variable to the extent of 79.00%. In addition, the approximate chi-square value was found to be 1597.789 and the significance value was (0.000) which is less than the 1 percent level of significance. It also showed that there was a significant correlation found between the variables of this study. Among the various factors of this study, the most important factors were showed as Family Environment Factor and the Work Environment factor as the Eigen Value were found to be 4.138 and 3.277 with the reliability of 0.876 and

0.806 respectively. The percentages of variance explained with regard to the above factors were 22.932 and 15.240 respectively. Next to this, the important factor considered were Social Environment and the Mental Effect of stress, Physical Effect of Stress with the Eigen Value of 2.832: 2.185: 1.842 with the reliability of 0.708, 0.701 and 0.725. The percentage of variance explained for those factors were 8.849, 6.829 and 5.756 respectively.

Table 4: Table showing the result of Exploratory Factor Analysis along with the Correlation Coefficient for each variables

ROTATED COMPONENT MATRIX									
		Family Environment factors	Work Environment Factors	Social Environment Factors	Mental Effect of Stress	Physical Effect of Stress	Initial Eigen Values	Percentage of Variance Explained	Cronbach's Alpha Value
01.	My family members are not giving support to perform my profession satisfactorily	0.857					4.138	22.932	0.876
02.	Every day I am having quarrelling with my family members	0.798							
03.	I could not able to do things on my own in my family	0.776							
04.	My opinion is not considering as important in my family	0.766							
05.	I could not able to spend maximum time with my family	0.751							
06.	I am receiving many criticism from my family members	0.728							
07.	I am having a strict time schedule in my profession		0.730				3.277	15.240	0.806
08.	I am dealing with subordinates with different kind of mind		0.728						

	set and attitude								
09.	I am having heavy work load with more responsibilities		0.706						
10.	My nature of job is found to be a risky one with no leisure time		0.725						
11.	The behavior of my staff members induces more stress on me		0.718						
12.	Handling of different type of patients indulging me in a heavy stress		0.706						
13.	I am giving unfair treatment by my higher ups			0.838			2.832	8.849	0.708
14.	I am paying less salary for my work performance			0.816					
15.	I could not able to act on my own decision			0.682					
16.	My profession is being crossed by political pressure which creates high stress in my job			0.777					
17.	I am experiencing a negative environment around my profession where I am working			0.770					
18.	The environment now I am working is spoiling			0.631					

	my track of good service								
19.	I am experiencing a different of opinion among my colleagues and this is leading to occupational stress			0.767					
20.	I am experiencing more irritation towards my profession				0.823		2.185	6.829	0.701
21.	My profession makes me frustrated				0.758				
22.	I could not able to concentrate on my profession due to high stress experienced				0.575				
23.	I got depression at all times during my working hours				0.826				
24.	There is no self control on me due to the occupational stress in my working environment				0.798				
25.	I am experiencing Excessive fatigue					0.727	1.842	5.756	0.725
26.	I am having thoughts of hurting my own and others too					0.555			
27.	I am suffering from Head aches					0.520			
28.	I am experiencing Tremulousness/					0.704			

	restlessness								
29.	I am experiencing Hyperventilation or choking sensation due to my occupational stress					0.589			
30.	When I get stressed up, I tend to lack initiative in all my work					0.694			
31.	I am experiencing chest pain and blood pressure					0.844			
32.	I am having Chest pain or pressure due to occupational Stress					0.725			

Multiple Regression Analysis between the factors that influencing the stress among the respondents and its impact on physical stress:

In view to find the impact of the factors that influencing stress through family environment, work environment, social environment and mental effect of stress, multiple regression analysis was carried out and the result arrived is depicted in Table below

Table -6- Table showing the value of Multiple Regression analysis among the factors that influencing the stress among the respondents and its impact on job Performance

Dependent Variable	Independent Variable	Regression Co efficient (Beta)Value	Standard Error	“t” Value
Physical Effect of Stress	Constant	11.375	0.982	11.584**
	Family Environment	0.077	0.049	1.567
	Work Environment	1.030	0.039	26.369**
	Social Environment	-0.034	0.055	-0.620
	Mental Effect of stress	-0.340	0.047	-7.283**
	R Value	0.626		
	R ² Value	0.623		
	Number of Samples	467		
	F ratio	193.170**		
	Durbin Watson Value	1.886		

**.-Significance at one percent level

As the main objective of this study is to find the impact of the factors that influencing the stress among the respondents taken up for consideration, out of various factors, “physical effect of stress” is one such factor and this may be due to the influence of other factors like stress

due to Family Environment, Work Environment, Social Environment and Mental Effect of stress. Hence the impact of these factors on the physical effect of stress among the respondents were also studied through multiple regression analysis and from the result, it is seen that the F-ratio was found to be 193.170 which indicated that the result of the regression model is statistically significant as the “p” value is less than the significant level ($P=0.01$). The importance of the variables and factors considered in this study were also confirmed through Beta Coefficients and listed in the table above. It is also seen that the coefficient of determinant R^2 value was found to be 0.623. This means that the changes and the unit increase in the independent variable taken up in this study explain the changes of 62.3 percent in the physical effect of stress among the respondents.

The Factors “Stress due to Work Environment” and “Mental Effect of stress” were highlighted as significant predictors on physical effect of stress of the respondents as the “p” value is statistically significant at 1 percent level of significance. But it is noticed that the factor “Mental effect of stress” were found with negative value but statistically significant but at the same time, the factor “Stress due to Work environment” were found positively affected the physical effect of stress.

Suggestions and Conclusion

The objectives oriented results reveal that major factors that are influencing the occupational stress of the doctors are Family environment factor, Work environment factor, Social environment factor, mental effect of stress and physical effect of stress. These factors are considered to be very much significant in creating the occupational stress among the doctors. The influence of family environment, work environment, social environment and mental environment tend to affect the physical stress of the doctor which is explained by the regression values. The physical effect of stress is explained to 63 percent by the independent variables. It explains the validity of the model and impact of these factors on stress. The study related to the occupational stress has given various highlights on the factors influencing the stress level of doctors and impact of these factors on the physical stress of the doctors. The analysis reveals that the component of the environment has to be wise to reduce the stress level of doctors and enable them to work to their potential.

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