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Measurement of Job Stress & Satisfaction among Sudanese Doctors in Khartoum State – Sudan 2019

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Abstract:-

- ***Introduction:***

Medicine has been one of the appreciated professions in Sudanese society, and doctors were role models for morals, dedication and satisfaction. However, doctors' increase subjected to stress and their satisfaction was getting low, and eventually will affect the quality of health care provided, its continuity, the physician's performance, productivity and commitment.

- ***Methods:***

A descriptive cross-sectional hospital based study was conducted in governmental hospitals in Khartoum state in period from January to May 2019. An adopted questionnaire containing 3 sections which were socio-demographics characteristics, 21 questions to assess stress and 19 questions to assess 7 domains of job satisfaction were used.

- ***Results:***

A total of 164 responses from doctors were collected from governmental hospitals in Khartoum state. Female were 87(53%). The majority of doctors were single 60.4%. A 94.5% of doctors were at moderate to severe level of stress. Overall 54% doctors were dissatisfied with their job. It is found that there was a strong association between job stress and satisfaction (p value = 0.000 less than 0.05).

- ***Conclusion:***

Most of the Sudanese doctors with different qualifications were stressed and dissatisfied with their job due to low salaries and poor working conditions and safety measures with strong association between stress & satisfaction.

Keywords: *Job Stress, Job Satisfaction, Doctors.*

I. INTRODUCTION

Working life is one of the most important parts of our daily lives as it takes much longer time of the day and effort. So Nowadays, job satisfaction is an important issue in all sectors especially in medical field as it has a great impact on quality of health care provided, its continuity, the physician's performance, productivity and commitment. Hop pock (1935) defined job satisfaction as "any combination of psychological, physiological and environmental circumstances that cause a person truthfully to say I am satisfied with my job"(1).

Studies showed that a variety of factors can affect a person's level of job satisfaction. Payment, opportunities for professional development, opportunities for using skills and abilities, the quality of working conditions, working hours, stress as well as social relations, doctor patient relationship and the job itself all found to have its impact on satisfaction(1)(2)(3) .

Also factors such as: gender, age, level of education and qualification can affect health care workers satisfaction(3) .

The doctors are considered to be members of high stress occupations together with dentists, pilots, police, miners and social workers according to Cooper et al. (1988). As they have their responsibility for "people" rather than "objects" (Caplan et al., 1975), and the fact that their actions or omissions have a great impact on human life (Rees, 1995; Antoniou, 2001)(4).

Doctors have been continually under evaluation of their performance and competence by patients, clients and \ or colleagues, and in direct face to face relationships with them. Also they are at high risk of diseases and injuries which maybe a life threatening. Beside that they should appear calm, kind, controlled and empathetic. All these put a high pressure on doctors and make the environment around them very stressful and devastating. Which accordingly affects the quality of health care provided(4).

Factors that influence job stress like stress, exhaustion or difficult work shifts also cause job satisfaction(3). Several studies have tried to determine the link between stress and job satisfaction. As the stress can be a factor of dissatisfaction, Fletcher & Payne (1980) identified that a low satisfaction can be a source of stress, while high satisfaction can extenuate the effects of stress(5).

Hence there is no a lot of job stress and satisfaction surveys were done and the data about doctors' stress and satisfaction was about nothing, the aim of this research to answer the questions:
Did the Sudanese doctors experience a stressful job?
And how many Sudanese doctors satisfied with their jobs?
And are job stress and satisfaction interrelated?

Job satisfaction survey is regularly conducted, in many countries, and by monitoring obtained data it is possible to notice omissions in organization of work (6). Unfortunately, in this region, job satisfaction has not still received the proper attention.As the study of Landsbergis (1988) and

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terry et al. (1993) showed that, the higher level of work stress the lower level of job satisfaction. And Cummins (1990) was emphasized that job stressors are predictive of job dissatisfaction(5) , and dissatisfaction leads to increased physician's absenteeism, lower productivity, increased turnover, hence adversely affects the quality and outcome of the health care system. (2). Hence the importance of measuring job satisfaction.

II. RESULTS &DISCUSSION:

Since the ultimate goal of health sectors is to provide a good quality of health care for the population, we must address the health of health care providers too, as their distress and low satisfaction may directly affect their performance and patient's outcome. The study aimed to encountered 274 doctors to participate, however only 164 was contributed in the study. The response rate was 58.9%. Although it was near to that of a similar study in al-Gezira , Sudan(7) where the response rate was 58% , it was assumed to be very low in comparison with other studies conducted in Greece(8) , Canada(9) and Saudi Arabia(10) .

The majority of doctors in the study (64%) were young aged from 20 to 30 which coincided with that the majority of them were house officers and medical officers of 28.7% and 32.9% respectively. (Figure -1)(Figure -2). This indicates that youth are the driving force in the health sector in Sudan, and that they are in direct contact with the patients. Females accounted for 53.0%, and males were accounted of 47% of the participants (Table -1). This was observed also in many studies in Sudan, one was too close to this research data, conducted in AL-Gazira state were female accounted of 52% and 48% were males (7), while other one which conducted in River Nile state were females constituted of 68% and 32% were males showed more significant difference (1). Also worldwide studies showed females predominance in Indonesia (11) and Kenya (12). However, this was consisted with the picture of Sudan health workforce which showed a slight dominance of females who were representing 51% (13).

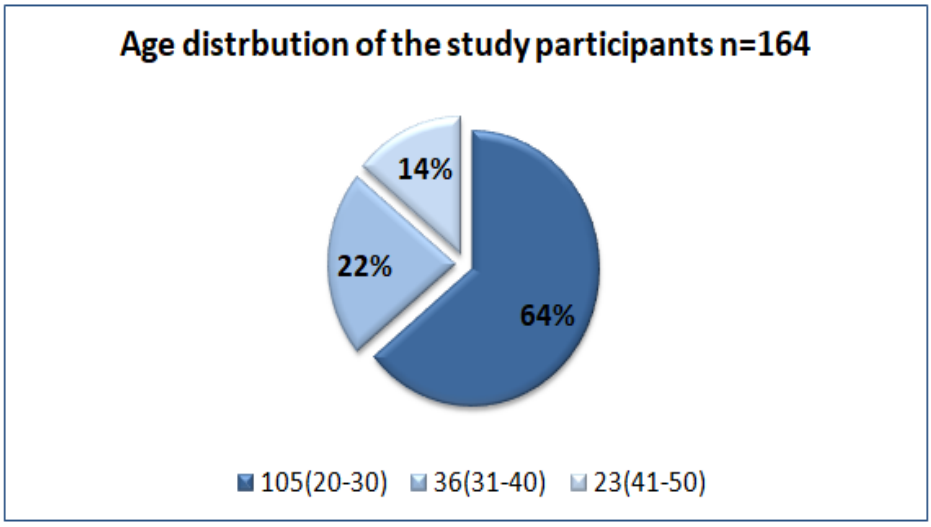

Fig -1 age distribution of the study participants.

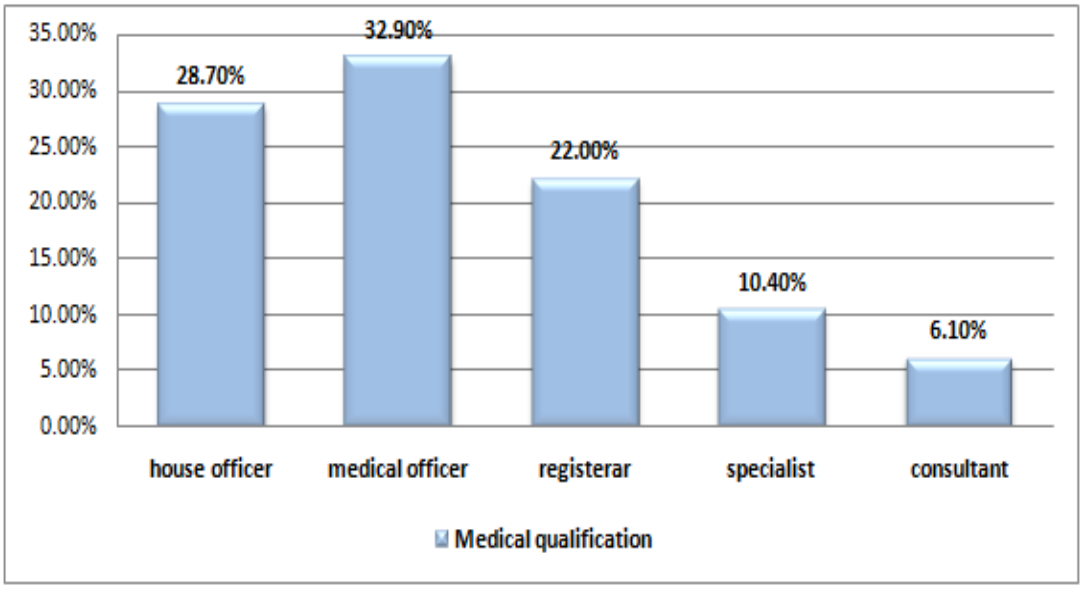

Fig -2 medical qualifications of study participants.

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➢ *Assessment of job stress of study participants:*

Job stress of the participants was demonstrated in a scale from (12 to 60). Higher score in the scale mean higher level of stress. Minimum score was 12 and the maximum was 60 with median 44 and mean of 43.79. (Table-2). Job stress scores were grouped into mild, moderate and severe stress according to individual score. More than 90% of Sudanese doctors suffer from moderate or severe stress. More than half of them were in severe stress.(Table -3).In study conducted in cancer center in Canada, 41.7% of physicians were at high level of job stress(9). This difference results from that difference in the working environments and social structure. Also a study in Karachi 48% of doctors graded job stress from high to very high levels(14).

Inability to treat a patient was the major stressor of the Sudanese doctors, and this is indicating their high sense of responsibility and humanity. Also the study found that one of the reasons that cause stress is the nature of the work, which requires a high level of knowledge and skills. Given the current capabilities, the burdens placed on doctors are very high which cause them to work as hard as they can to meet the urgent need for the hospitals. The imbalance between theoretical and practical training applied in hospitals was also one of the reasons that cause stress, and this is the responsibility of medical colleges in an attempt to bring the concepts of students closer to and educate them about the current situation before joining the medical staff as house officers. Unlike doctors in Greek were stressed more about career choice, unemployment, and lack of training(8).

➢ *Assessment of job satisfaction of study participants:*

Job satisfaction of the participants was demonstrated in a scale from (19 to 95). Higher score in the scale mean higher level of satisfaction. Minimum score was 19 and the maximum was 80 with median 48 and mean of 49.78. (Table -4).Kolmogorov-Smirnova and Shapiro-Wilk tests were used to test the normality of the data. Since the p value >0.05 we can't reject the null hypothesis, then the data was found to be normally distributed. Since job satisfaction score was normally distributed mean was used to divide the data into above the mean which represent satisfaction and below the mean which represent dissatisfaction.

This study also found that more than half of the doctors are dissatisfied with their job.(Figure -3), and this was similar to the study conducted in river Nile state where 50.9% of doctors were dissatisfied(1). Other study conducted in Karachi where found 68% of doctors were dissatisfied(14). The majority of those who dissatisfied were young doctors. This is inconsistent with a study in Greece where was the general practitioners had high levels of job satisfaction(15).

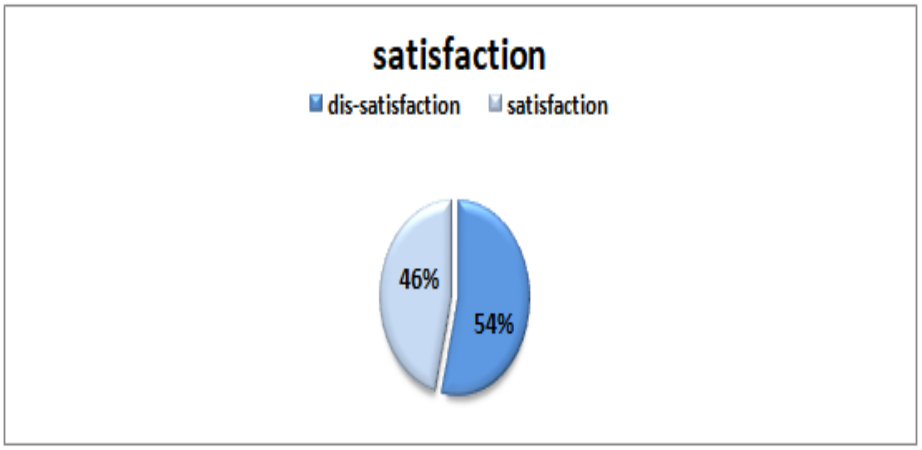

Fig -3 overall job satisfaction profiles among doctors.

Doctor's responses of job satisfaction domains showed that payment was the most domains which doctors tended to be strongly dissatisfied with 67.1%, neither income itself nor its proportionality to work. 50.6% was strongly dissatisfied with safety management. 48.8% also was strongly dissatisfied with their office. However, despite the low level of satisfaction, more than 44% of doctors are agreed with that if they had to decide all over again, they would decide to take the same job again. (Table -5).

➢ *The association of socio-demographic data with job stress and satisfaction:*

There was a significant association of age and marital status with both job stress and job satisfaction (p value <0.05) while medical qualification has a significant association with job stress only. Study in Saudi Arabia found that the stress score increased with age(10). However a study in community physicians in Sudan found that the association was insignificant(2)(Table -6). Females showed higher level of stress than males and also low level of satisfaction. (Table -7).

➢ *Association between job stress and job satisfaction :*

Also this study showed that a moderate negative significant association between job stress and satisfaction on Pearson chi square (P value = 0.000 less than 0.05). (Table -8). Indicated that increasing in stress associated with decreased in satisfaction. Our results agreed with a study in Greece were revealing that occupational stress exerts a negative impact on nurse's satisfaction(8). Other study in Malaysia also showed there was a negative relationship between job stress and job satisfaction(5).

III. LIMITATION OF THE STUDY

The study was conducted in the period from January to May 2019 when the country was politically unstable, and this was interfering with proper conduction of the study. Also at that period there was a strike of doctors due to political issues which also contributed to low response. Small sample size which may not be a good reflection of the actual status.

IV. CONCLUSION

According to the finding of the study,most of the Sudanese doctors with different qualifications were stressed and dissatisfied with their job due to low salaries and poor working conditions and lake safety measures with strong association between job stress & satisfaction.

V. METHODOLOGY

➢ *Study design:*
Descriptive Cross sectional hospital based study.

➢ *Study area:*
Governmental hospitals in Khartoum state with its seven localities, Khartoum, Omdurman, Umbadda, Karrari, Jabal Awlia, Bahri and Sharq Alneel.

➢ *Study population:*
Sudanese doctors who worked in hospitals at Khartoum state with their different qualifications during the study period.

Inclusion criteria:
1- Sudanese doctors, both sex who aged more than 20.
2- Doctors who were working at selected hospitals during the period of the study.
3- Those who completed the questionnaire.

Exclusion criteria:
1- Doctors who weren't working or hadn't a stable job at selected hospitals.
2- Those who did NOT completed the questionnaire.

➢ *Study duration:*
The study was conducted in the period from January 2019 to May 2019.

➢ *Study Sampling:*

➢ *Sampling techniques*
Two step sampling was used.
- Non probability purposive sampling was used to select hospitals from Khartoum state seven localities.

One hospital was selected form each locality:
1. Ibrahim Malik teaching hospital from Khartoum locality.
2. Jabal awlia hospital from Jabal Awlia locality.
3. Omdurman teaching hospital from Omdurman locality.
4. Umbadda hospital from Umbadda locality.
5. Alnwo teaching from Karrari locality.
6. Bahri teaching hospital from Bahri locality.
7. Alban jaded hospital from Sharq Alneel locality.

- Non-probability convenient sampling was used to select participants.

➢ *Sample size calculations:*
Cochran equation was used to estimate sample size.

$$\square = \frac{\square^{\square}\square\square}{\square^{\square}}$$

Where:
n= is the sample size.
z= is from the statistical table 1.645 for confidence interval 90%.
e= is the margin of error 5%
p= is the population proportion from previous similar study 34.4
n was found to be 274.

➢ *Ethical considerations:*
- Ethical approval had taken from ethical Committee in the University of Khartoum.
- The decision of participation was totally voluntary.
- The study wasn't carried any risks or harm for participants.
- To insure participants confidentiality and privacy no names were obtained and ID number were used.

➢ *Data collection:*

➢ *Data collection tool:*
Data is collected using a self-administered online questionnaire which distributed to assess and measure doctor's job satisfaction and stress together with socio-demographic data. The questionnaire was built according to standardized similar questionnaires and was adopted to match the Sudanese culture and scope of the study.

Questionnaire was divided into 3 parts:
1. Socio-demographic data which includes age, gender, marital status and qualification...

2. Stress section.
Based on previous occupational stress scale (16)(17)(18) , a 12 statements were structured to assess doctors stress according to stressors and stress symptoms . Through a likert scale of strongly disagree, disagree, undecided, agree, strongly agree.

3. Satisfaction section.
Elements used to assess job satisfaction were divided into 8 domains which are the factors affecting doctors satisfaction according to literature (19)(20)(21)(22).

The 8 domains were job itself, working environment, interpersonal relationship, payment, organization, patient relationship and overall satisfaction.

Below these 8 domains there are 19 statements about satisfaction using a likert scale of strongly disagree, disagree, undecided, agree, and strongly agree.

- *Data collection process:*

The self-administered questionnaire was distributed between doctors in the period from January 2019 to May 2019. Only 164 questionnaires was completed and matched with inclusion\exclusion criteria. With low response rate of 59.8%.

- *Data analysis:*

Data was analyzed using SPSS VERSION 23 .tables and graphs were used to present results. And Chi square test was used to assess the association. Pearson correlation was used to assess the relation between job stress and satisfaction.

- *Score:*

The questionnaire we developed by the researcher according to literature, there is no standard score.

As likert scale was used a 1 to 5 score was given to represent the response from strongly disagree to strongly agree respectively, and the sum of these scores was calculated. This gave a score range of 12 to 60 for stress and 19 to 95 for satisfaction.

Then the scores categorized into low, moderate, high for stress. For satisfaction, mean was used to divide the respondent score into above the mean which represent satisfaction and below the mean which represent dissatisfaction.

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Lists of figures :

Lists of tables :

gender	Frequency	Per cent
male	**77**	**47.0%**
female	**87**	**53.0%**

Table -1gender distribution of the study participants.

Descriptive Statistics	N	Minimum	Maximum	Mean	Median	Std. Deviation
Stress score	**164**	**12.00**	**60.00**	**43.7927**	**44.00**	**8.87851**

Table -2 descriptive statistics of job stress scores among doctors.

Doctors Stress	Frequency	Percent
Mild stress	9	5.5%
Moderate stress	66	40.2%
Severe stress	89	54.3%

Table -3 overall stress profiles for doctors in this study.

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Descriptive Statistics	N	Minimum	Maximum	Mean	Median	Std. Deviation
Doctor's job satisfaction	**164**	**19.00**	**80.00**	**49.7805**	**48.00**	**12.76164**

Table -4 descriptive statistics of job satisfaction among doctors.

Job satisfaction	strongly disagree	disagree	undecided	agree	strongly agree
Job itself					
My responsibility is demanded.	4.3%	3.0%	11.6%	49.4%	31.7%
I have the chance of learning new skills.	8.5%	12.8%	11.0%	36.6%	31.1%
Working environment & conditions					
My working condition is comfortable.	43.9%	27.4%	11.6%	11.6%	5.5%
I am satisfied with the office.	48.8%	22.6%	9.8%	12.2%	6.7%
Our department is well-staffed.	29.9%	29.3%	14.0%	18.9%	7.9%
I am satisfied with working hours.	45.7%	18.3%	12.2%	17.1%	6.7%
I am satisfied with the supervision by seniors.	21.3%	25.0%	15.9%	26.2%	11.6%
Interpersonal relationship					
I work in harmony with my colleagues.	3.7%	18.3%	20.7%	37.2%	20.1%
I am satisfied with Senior's attitude toward the juniors.	14.6%	24.4%	14.0%	31.1%	15.9%
Payment					
I am satisfied with my income.	67.1%	10.4%	11.0%	6.1%	5.5%
Organization & administration					
The daily management system is standardized.	37.2%	32.9%	20.1%	7.9%	1.8%
I am satisfied with the safety management system.	50.6%	19.5%	18.3%	8.5%	3.0%
I can feel the respect and care from leaders.	25.0%	26.2%	15.9%	26.8%	6.1%
Patient relationship					
I am satisfied with the behavior of the patients toward staff.	12.8%	28.0%	24.4%	29.9%	4.9%
I feel patients are satisfied with the quality of care in the health facility.	36.0%	32.3%	12.8%	15.2%	3.7%
Overall job satisfaction					
I like the present work.	17.1%	34.1%	15.9%	25.6%	7.3%
If I had to decide all over again, I would decide to take the same job.	19.5%	20.1%	15.9%	23.2%	21.3%
I am satisfied with my job.	17.1%	22.0%	17.7%	31.7%	11.6%
My income is proportional to my work.	67.1%	14.0%	6.1%	6.7%	6.1%

Table -5 Doctors responses of job satisfaction domains.

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Variables	Pearson chi square value	
	Job stress	Job satisfaction
Age	**0.006**	**0.000**
Gender	0.328	0.467
Marital status	**0.027**	**0.000**
Medical qualification	**0.028**	0.22
Medical specialty	0.556	0.928

Table -6 Pearson chi square and Fisher's extract test values of socio-demographic data and job stress and satisfaction.

		Level of job stress			Job satisfaction	
		Mild	Moderate	Severe	Dissatisfied	Satisfied
		Column N %	Column N %	Column N %	Column N %	Column N %
age	20-30	22.2%	59.1%	71.9%	77.3%	48.7%
	31-40	55.6%	19.7%	20.2%	15.9%	28.9%
	41-50	22.2%	21.2%	7.9%	6.8%	22.4%
gender	male	55.6%	53.0%	41.6%	44.3%	50.0%
	female	44.4%	47.0%	58.4%	55.7%	50.0%
marital status	single	44.4%	53.0%	67.4%	76.1%	42.1%
	married	33.3%	45.5%	29.2%	22.7%	51.3%
	divorced	11.1%	0.0%	2.2%	1.1%	2.6%
	widowed	11.1%	1.5%	1.1%	0.0%	3.9%
Medical qualification	house officer	22.2%	25.8%	31.5%	35.2%	21.1%
	medical officer	44.4%	31.8%	32.6%	34.1%	31.6%
	register	0.0%	24.2%	22.5%	22.7%	21.1%
	specialist	0.0%	9.1%	12.4%	4.5%	17.1%
	consultant	33.3%	9.1%	1.1%	3.4%	9.2%
Medical specialty	medicine	11.1%	24.2%	30.3%	26.1%	27.6%
	surgery	22.2%	24.2%	22.5%	26.1%	19.7%
	obs & gyn	33.3%	13.6%	15.7%	15.9%	15.8%
	pediatric	0.0%	13.6%	13.5%	12.5%	13.2%
	emergency medicine	11.1%	4.5%	7.9%	6.8%	6.6%
	other	22.2%	19.7%	10.1%	12.5%	17.1%

Table -7 distributions of participants' socio-demographic data toward job stress and satisfaction.

		Job satisfaction
Job stress	**Pearson Correlation**	**-.420****
	Sig. (2-tailed)	**.000**
	N	**164**

Table -8Pearson Correlation of job stress and satisfaction.