

A Study of Levels of Stress Among Physicians in A Tertiary Care Hospital In Kolkata India

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Abstract

Background: It is essential to know to about work related stress, as prolonged stress at workplace reduces the performance of an individual and has an indirect/direct effect on health & on his/her professional social and personal life. In a health care system it is very important to know about the stressors, as increased stress levels invariably affects interpersonal relationships, doctor to patient communication, inter-colleague relationships and professional performance. **Aim:** To determine a) Levels of stress among physicians b) Factors associated with high stress levels c) Attempt to develop tips for reducing stress on a long term basis. **Materials and Method:** A group administered questionnaire based survey was done in which a pre validated questionnaire was used both in clinical settings and on epidemiological settings on mental health status of the participants. All full time consultants, associate consultants, attending consultants, Post graduate trainees from Masters in Emergency Medicine, DNB Medicine, family medicine, orthopedics, pediatrics, full time residential medical officers attached to Peerless Hospital during the study period were included. All non-physicians, non medical and ancillary staff attached to Peerless Hospital were excluded. The sample size required for this survey was calculated as 72, rounded to 70. **Statistical Analysis:** In the present study 20 out of 43 physicians of age group 25-35 found to have moderate to severe stress. The another factor seen is physicians who are taking care of clinical work and working in-hospital are experiencing more stress the p values for these two factors came to be (p=0.01) which is statistically significant. **Result:** Though majority of responders initially felt that they perfectly well, 25% realised the need of a good tonic/ refreshment. Later 36% of physicians felt that they are not feeling well in daily lives. Approximately 64% felt that they were feeling run down and out of sorts. Many (41%) experience headaches due to work stress. 41% of physicians complained both hot and cold spells recently. A large number of physicians had lost their sleep. 21% of physicians feel that they are nervous all the time. Though majority are able to keep themselves busy some are not. Some are taking longer time to complete their routine tasks. Though 89% feel they are able to do things better than usual a large number of physicians contradict them. A large number of physicians are taking longer time to complete their routine tasks. 10% feel less satisfied in the way they have carried their task. A large chunk (9%) feels themselves to be worthless though another small group (3%) believe that their life is entirely hopeless. A small population (3%) of physicians confesses that the idea of making away with themselves actually crossed their minds. Even some say (4%) that at some point of time they thought of taking their own life. 6% of physicians feel that their nerves are so bad that they are unable to do anything. 4% physicians says that the idea of taking their life has crossed their mind. **Conclusion:** There is trend of higher GHQ scores that correlates with the higher stress levels amongst the emergency physicians and the physicians working in-hospital and taking care of clinical departments.

Keywords: Stress; Physician Work Load.

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Introduction

Stress can be either eustress or distress. i.e. in simple terms it can be good or bad. Whether physical or mental, it has been attributed to affect physical/mental health in some or the other way. So the need for evaluation of stress levels among health care provider so as to know the factors associated with high levels of stress and to modify the factors in a way that reduces the stress levels among physicians.

Various persons have defined stress in various ways few of those definitions are coded here:-

- Stress was defined as the *nonspecific response* of the body to any demands made upon it (Selye 1976).
- Stress was defined as environmental conditions that require *behavioral adjustment* (Benson, H. *The Relaxation Response*, 2000, pg. 41).

Various studies have shown that people adopt unhealthy life style to deal with stress. The term "*burnout*" which is a result of prolonged stress is characterized by progressive loss of idealism energy and purpose experienced by people working in the human services (Agius et al 1996). The burnout phenomenon as defined by Pines and Maslach was as a syndrome of emotional exhaustion involving the development of a negative self-concept, negative job attitudes and loss of concern for clients (Schweitzer, 1993). Maslach also devised an inventory to measure burnout in physicians known as Maslach burnout inventory.

Chronic stress reactions and depression are often characterized by long term activation of the hypothalamic-pituitary-adrenal axis and the sympathetic nervous system which were found to be associated with the development of abdominal obesity, and this may explain why depression or chronic stress increases the risk of diabetes (Björntorp, 2001; Vogelzangs et al., 2008). The vicious cycle of stress, excessive secretion of cortisol and other stress hormones which triggers the immune system as it has a direct line to the hypothalamus. When the immune system is activated to fight illness or infection, it sends a signal to the hypothalamus to produce its stress hormones, including cortisol. The flow of hormones, in turn, shuts off the immune response. This negative-feedback loop allows a short burst of immune activity, but prevents the immune system from over activity. In this way, some stress can be beneficial for the individual. But chronic stress produces such a constant flow of cortisol that the immune system is dampened too much. This helps explain how stress makes us ill (Sternberg, 2000).

Various studies indicate that physicians are not very good at taking care of themselves if stressed/burnt out.

Since stress has effect on an individual's professional, social, personal life as well on physical/mental health its evaluation should be done to understand the common stressors and levels of stress in an organization and ways and means to reduce it.

It is essential to know to about it as prolonged stress at workplace reduces the performance of an individual and has an indirect/direct effect on health & on his/her professional social and personal life.

In a health care system it is very important to know about the stressors, the existing stress levels as increased stress levels invariably affects interpersonal relationships, doctor to patient communication, inter-colleague relationships and professional performance.

Aims of the Study

The study was carried out with the aim of determining the following.

- a. Levels of stress among physicians
- b. Factors associated with high stress levels
- c. Attempt to develop tips for reducing stress on a long term basis.

The primary research question in study was to evaluate levels of stress, and to know about the common stressors associated with it.. The definition chosen for the present study is the definition stated by Seyle 1976 and Benson, H as these definitions are easy to understand and easy to correlate with day today situations. . Evaluation of the factors will further help to reduce the stress and enhance performance levels amongst doctors.

Study Methodology

It dealt with the research methods that was used in this study to evaluate the levels of stress among physicians of Peerless Hospital, Kolkata, India. The study was conducted in the Peerless Hospital and B.K. Roy Research Centre, Kolkata. The duration of the study was 1 year between September 2013 to August 2014. It was an observational cross sectional nonrandomized, questionnaire based study, designed to look at the factors strongly associated with subjective stress levels among the all Physicians and Surgeons in Peerless Hospital. A group administered

questionnaire based survey was done in which a pre validated questionnaire was used both in clinical settings and on epidemiological settings on mental health status of the participants. All full time consultants, associate consultants, attending consultants, Post graduate trainees from Masters in Emergency Medicine, DNB Medicine, family medicine, orthopedics, pediatrics, full time residential medical officers attached to Peerless Hospital during the study period were included. All non-physicians, non medical and ancillary staff attached to Peerless Hospital were excluded. The sample size required for this survey was calculated as 72, rounded to 70. Upon completion of data collection, data was coded, captured on Excel and then the statistical analysis was done.

Results

As this is questionnaire based study, several questions were formed & data interpretation was done

Fig. 1: Feeling perfectly well and in good health

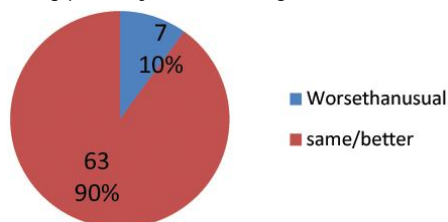


Fig. 2: Have you recently been feeling in need of a good tonic?

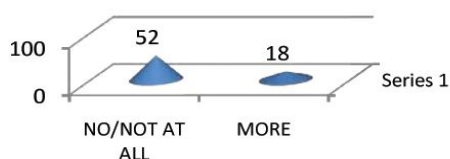


Fig. 3: Feeling run down and out of sorts

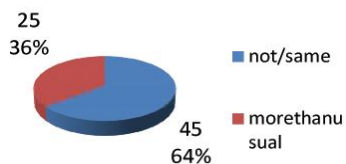


Fig. 4: Feeling ill



Though majority of responders initially felt that they perfectly well, 25% realised the need of a good tonic/ refreshment. Later 36% of physicians felt that they are not feeling well in daily lives. Approximately 64% felt that they were feeling run down and out of sorts.

Fig. 5: Loss of sleep or over worry

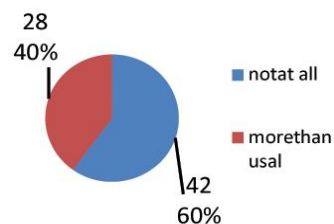


Fig. 6: Getting edgy and bad-tempered?

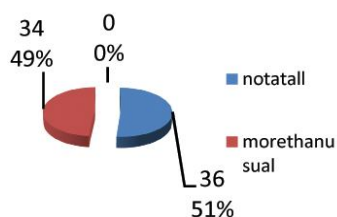


Fig. 7: Getting scared or panicky for no good reason

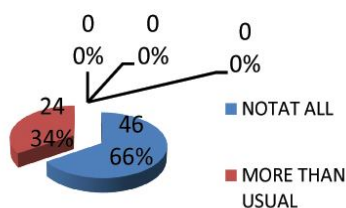


Fig. 8: Have you recently found everything getting on top of you?

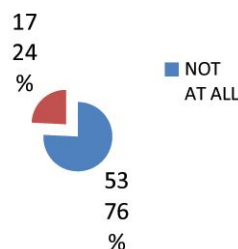


Fig. 9: Feeling nervous and strung-up all the time?

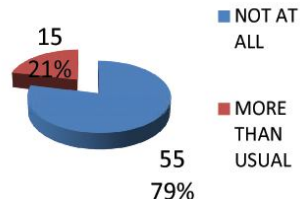
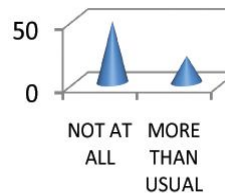


Fig. 10: Have you recently been managing to keep yourself busy and occupied?



Many (41%) experience headaches due to work stress. 41% of physicians complained both hot and cold spells recently. A large number of physicians had lost their sleep. 47% of physicians shared that they are experiencing difficulty in sleeping once they are off and feel that they are in constant strain. Many (49%) are getting edgy and bad tempered easily.

21% of physicians feel that they are nervous all the time. Though majority are able to keep themselves busy some are not. Some are taking longer time to complete their routine tasks. Though 89% feel they are able to do things better than usual a large number of physicians contradict them.

Fig. 11: Have you recently felt on the whole you were doing things well?

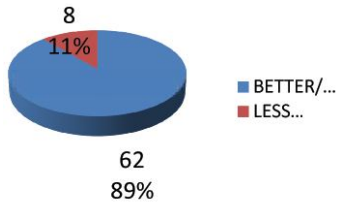


Fig. 12: Taking longer to do things

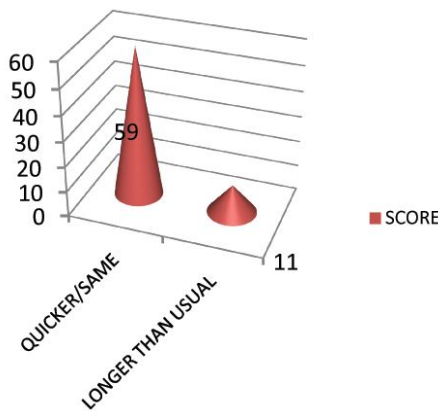


Fig. 13: Have you recently been satisfied with the way you've carried out your task?

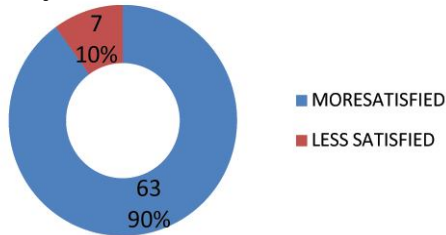
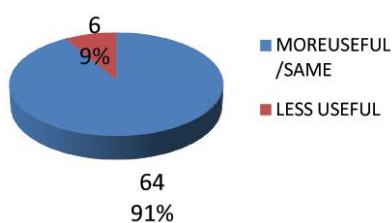


Fig. 14: Have you recently felt that you are playing a useful part in things?



A large number of physicians are taking longer time to complete their routine tasks. 20% feel they are unable to do things better than usual. 10% feel less satisfied in the way they have carried their task. Many physicians believe that they are not playing less useful part in their day today life.

Fig. 15: Have you recently felt capable of making decisions about things?

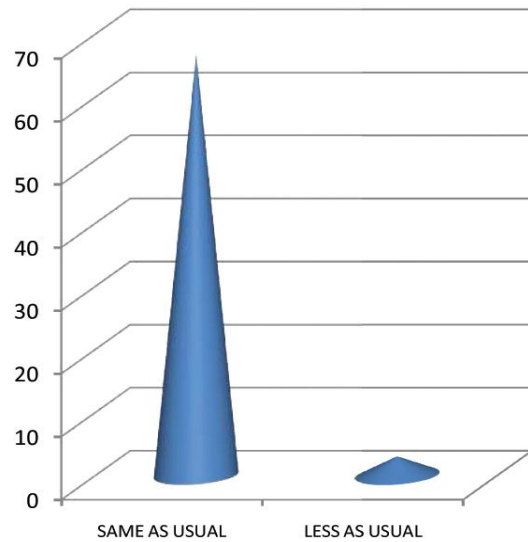


Fig. 16: Have you recently been able to enjoy your normal day-to-day activities?

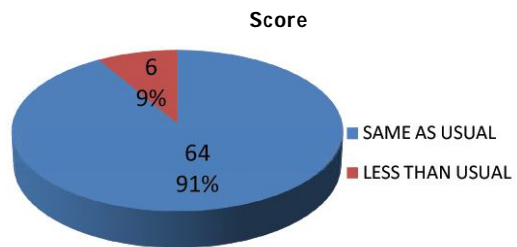


Fig. 17: Thinking oneself as a worthless person?

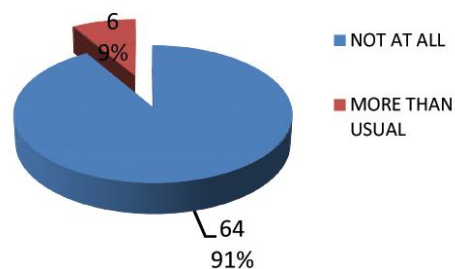
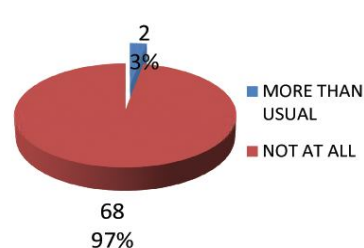


Fig. 18: Life is entirely hopeless



A small number (4%) of physicians had problems in decision making. Some (9%) say that they are not able to enjoy their day today activities same as usual. A large chunk (9%) feels themselves to be worthless though another small group (3%) believe that their life is entirely hopeless.

Fig. 19: Life isn't worth living

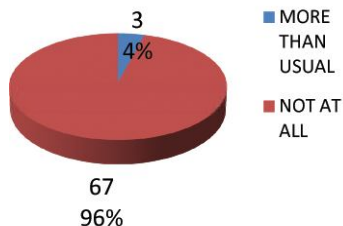
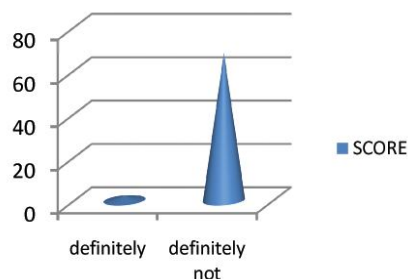


Fig. 20: Making away



A small population (3%) of physicians confesses that the idea of making away with themselves actually crossed their minds. Even some say (4%) that at some point of time they thought of taking their own life. 6%

Fig. 22: Wishing you were dead and away.

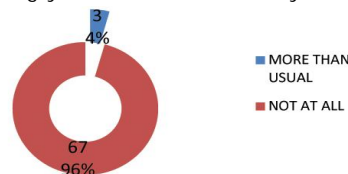


Fig. 23: Taking Life

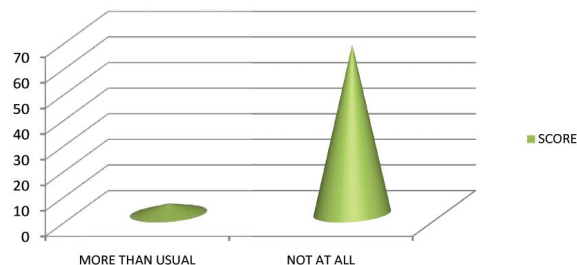
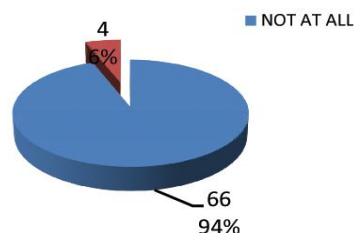


Fig. 21: Nerves were too bad



of physicians feel that their nerves are so bad that they are unable to do anything.. 4% physicians says that the idea of taking their life has crossed their mind..

Statistical Analysis

		score_3grp				
			< 8	8-14	15-28	Total
Age	25-35 yrs.	Count	23	16	4	43
		% within Age	.5	.4	.1	1.0
36-45 yrs.		Count	14	5	0	19
		% within Age	.7	.3	.0	1.0
46-65 yrs.		Count	3	5	0	8
		% within Age	.4	.6	.0	1.0

p=0.19

The physicians in the age group of 25-35 years, 16 out of 43 are in moderate stress and 4 out of 43 are in severe stress. i.e. 37% of physicians found to be in moderate stress and 9% of physicians found to be in severe stress. However it is not statistically significant.

Marital status

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Married	34	48.6	48.6	48.6
	Unmarried	36	51.4	51.4	100.0
Total		70	100.0	100.0	

Speciality

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Admin	2	2.9	2.9	2.9
	Internal Medicine	13	18.6	18.6	21.4
	Endocrinology	2	2.9	2.9	24.3
	Accident & emergency	35	50.0	50.0	74.3

Family Medicine	2	2.9	2.9		77.1
Cardiology	2	2.9	2.9		80.0
Gastroenterology	3	4.3	4.3		84.3
Orthopedics	2	2.9	2.9		87.1
Anesthesia	2	2.9	2.9		90.0
Radiology	2	2.9	2.9		92.9
Critical care	5	7.1	7.1		100.0
Total	70	100.0	100.0		

		score_3grp			Total	
			< 8	8-14	15-28	
Speciality	Admin	Count	1	1	0	2
		% within Speciality	.5	.5	.0	1.0
Internal Medicine		Count	9	4	0	13
		% within Speciality	.7	.3	.0	1.0
Endocrinology		Count	2	0	0	2
		% within Speciality	1.0	.0	.0	1.0
Accident & emergency		Count	16	16	3	35
		% within Speciality	.5	.5	.1	1.0
Family Medicine		Count	1	0	1	2
		% within Speciality	.5	.0	.5	1.0
Cardiology		Count	2	0	0	2
		% within Speciality	1.0	.0	.0	1.0
Gastroenterology		Count	2	1	0	3
		% within Speciality	.7	.3	.0	1.0
Orthopedics		Count	2	0	0	2
		% within Speciality	1.0	.0	.0	1.0
Anesthesia		Count	1	1	0	2
		% within Speciality	.5	.5	.0	1.0
Radiology		Count	2	0	0	2
		% within Speciality	1.0	.0	.0	1.0
Critical care		Count	2	3	0	5
		% within Speciality	.4	.6	.0	1.0
Total		Count	40	26	4	70
		% within Speciality	.6	.4	.1	1.0

p=0.54

Comments: The emergency physicians are having higher GHQ score as compared to other specialities.

Work Pattern

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Clinical	46	65.7	65.7	65.7
	Others	13	18.6	18.6	84.3
	Admin+clinical	2	2.9	2.9	87.1
	Clinical+Others	9	12.9	12.9	100.0
	Total	70	100.0	100.0	

Comments: The physicians working in the clinical departments are experiencing moderate to severe stress it is statistically significant (p value 0.01)

			score_3grp			
			< 8	8-14	15-28	Total
Work_place	Hospital	Count	33	20	3	56
		% within Work_place	.6	.4	.1	1.0
	Clinical	Count	0	0	1	1
		% within Work_place	.0	.0	1.0	1.0
	Others	Count	4	5	0	9
		% within Work_place	.4	.6	.0	1.0
	Hosp+clinic	Count	3	1	0	4
		% within Work_place	.8	.3	.0	1.0
Total	Count		40	26	4	70
	% within Work_place		.6	.4	.1	1.0

P=0.01

			score_3grp			
			< 8	8-14	15-28	Total
Nt_duty	Present	Count	29	23	4	56
		% within Nt_duty	.5	.4	.1	1.0
	Absent	Count	11	3	0	14
		% within Nt_duty	.8	.2	.0	1.0
Total	Count		40	26	4	70
	% within Nt_duty		.6	.4	.1	1.0

p=0.17

Comments: 41% of physicians who do nightshift seen to have moderately stressed however this is not statistically significant.

score

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	.00	20	28.6	28.6	28.6
	1.00	3	4.3	4.3	32.9
	2.00	3	4.3	4.3	37.1
	3.00	4	5.7	5.7	42.9
	4.00	3	4.3	4.3	47.1
	5.00	6	8.6	8.6	55.7
	6.00	1	1.4	1.4	57.1
	8.00	4	5.7	5.7	62.9
	9.00	1	1.4	1.4	64.3
	10.00	8	11.4	11.4	75.7
	11.00	4	5.7	5.7	81.4
	12.00	3	4.3	4.3	85.7

13.00	6	8.6	8.6	94.3
16.00	1	1.4	1.4	95.7
19.00	1	1.4	1.4	97.1
22.00	1	1.4	1.4	98.6
24.00	1	1.4	1.4	100.0
Total	70	100.0	100.0	

Score GRP

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	<=8	40	57.1	57.1	57.1
	8-14	26	37.1	37.1	94.3
	15-21	2	2.9	2.9	97.1
	22-28	2	2.9	2.9	100.0
	Total	70	100.0	100.0	

Comments: 37% of physicians found to have moderate stress

Result

Though majority of responders initially felt that they perfectly well, 25% realised the need of a good tonic/ refreshment. Later 36% of physicians felt that they are not feeling well in daily lives. Approximately 64% felt that they were feeling run down and out of sorts. Many (41%) experience headaches due to work stress. 41% of physicians complained both hot and cold spells recently. A large number of physicians had lost their sleep. 47% of physicians shared that they are experiencing difficulty in sleeping once they are off and feel that they are in constant strain. Many (49%) are getting edgy and bad tempered easily. 21% of physicians feel that they are nervous all the time. Though majority are able to keep themselves busy some are not. Some are taking longer time to complete their routine tasks. Though 89% feel they are able to do things better than usual a large number of physicians contradict them. A large number of physicians are taking longer time to complete their routine tasks. 20% feel they are un able to do things better than usual. 10% feel less satisfied in the way they have carried their task. Many physicians believe that they are not playing less useful part in their day today life. A small number (4%) of physicians had problems in decision making. Some (9%) say that they are not able to enjoy their day today activities same as usual. A large chunk (9%) feels themselves to be worthless though another small group (3%) believe that their life is entirely hopeless. A small population (3%) of physicians confesses that the idea of making away with themselves actually crossed their minds. Even some say (4%) that at some point of time they thought of taking their own life. 6% of physicians feel

that their nerves are so bad that they are unable to do anything.. 4% physicians says that the idea of taking their life has crossed their mind.

Discussion

Stress levels or psychological stress is one of the important factor which is often overlooked in day to day life. It has been seen in various studies increased psychological stress causes various physiological changes in human body and directly or indirectly affect one's health.

The higher stress levels also leads a person to adopt unhealthy life styles and push towards addictions.

This study is done keeping in mind about the physician's stress levels as it is found in literature that physicians are exposed to number of stressors and it is also being seen that if physicians are having more stress the patient care is decreased above all the physician him/herself becomes ill.

As a saying says "HEALERS TO BE HEALED FIRST". Knowing about the stress levels and attempts to reduce the stress levels is of paramount importance.

For few demographic factors i.e. the working place(in- hospital) and type of work(clinical) the physicians having these in common found to have moderate to severe stress and this was statistically significant . The emergency physicians are having higher GHQ score as compared to other specialties but this was not statistically significant because of small sample size and number of physicians from other specialties are also less to do good comparison. In 37% of physicians the GHQ score is high(from

moderate to severe stress) this was not statistically significant .

There are few limitations to this study and hence the results cannot be generalised because it is a single centre study and a small sample size.

Conclusion

There is trend of higher GHQ scores that correlates with the higher stress levels amongst the emergency physicians and the physicians working in-hospital and taking care of clinical departments.

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