



Original Research Article

The occupational stress and lifestyle of anesthesiologists living in the southern district of Tamil Nadu- A pilot questionnaire-based survey

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ABSTRACT

Purpose: A pilot questionnaire-based method was used to assess the qualitative data on work-related stress, family spending time and to evaluate the usefulness of this survey in managing their stress in their own feasible way among the anesthesiologists living in Tamil Nadu, Southern India.

Materials and Methods: It was a cross-sectional, confidential survey conducted using a questionnaire method. It consisted of 15 questions under four headings prepared and handed over personally to 100 anesthesiologists who attended the State-level Anesthesiology Continuing medical education (CMEs), conducted in two districts of the southernmost part of Tamil Nadu. All the questions had a minimum of three multiple-choice options. They were subdivided into four sections: a) Questions on Demographic profile, b) Questions on assessment of time spent with family members: travel time, c) Questions on the assessment of personal time spent: hobbies, recreational activities, exercise, and habits of addiction d) Questions to assess the work pressure.

Results: Seventy anaesthesiologists (70%) responded to the survey. The mean age of the participants was 39.5(12.2) years. Among them, 14.3% (10) had diabetes, and 11.4% (8) had hypertension young. 24.3% (17) had >12 duty hours. Most of them spend (34.3%; 24) only 1-2 hours per day with family. Only 15.6% (5) exercise > 5 hours a week. Fifty percent of the participants were stressed during the first case of death on the table (DOT), only 17% handled with confidence and were not stressed, but 33% were stressed and did not sleep well for a few days. The overall stress levels were 61.4%. Forty-two percent (42.8%; 30) have addictive habits such as smoking and drinking alcohol.

Conclusion: Our questionnaire-based study helped the responded Anaesthesiologists realize the amount of work-related stress, personal time, and family time is inadequate. At the end of the survey, most wanted to change their lifestyle and spend valuable family and me time for the rest of their life.

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1. Introduction

Anesthesiologists are uniquely trained to ensure proper safety of the patient's vitals intraoperatively and also to save critically ill patients in intensive care units.¹ In addition, Anesthesiologists working in Government hospitals are added with administrative responsibilities and mentoring

postgraduates. Recently, the scope of anesthesiologists' services has also expanded to the field of pain management. Furthermore, these added tasks have put them under chronic stress and caused burnout syndrome. The stress of anesthesiologists has been a topic of interest since 1947. A Popular study on the American Society of Anesthesiologists was done between 1947-1966. The authors have reported 441 deaths due to higher incidences of lymphomas, suicides,

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and coronary artery disease due to occupational stress.² Later, in 1957-1983, a study was conducted in the United Kingdom by Neil HAW et al. The authors also reported a higher incidence of suicides among Anaesthesiologist due to stress and burnout.³ The ideal way of managing stress-related diseases is to self-realize or to become aware that you are stressed.⁴ Fischer J et al., in their study, noted that a high proportion of the intensive care nurses and physicians (71.4%) had high salivary cortisol levels without consciously being aware of their stress levels.⁵ The self-exploration of “oneself” through awareness and understanding of “self” through questioning would help individuals to identify the causes of stress and to apply stress management methods. The sources of chronic stress include the complexity of the task involved, such as increased risk cases and VIP patients, fear of harming the patients, and fear of competition among them, leading to fear of job insecurity and inadequate recognition. Chronic stress may alter the hypothalamic-pituitary-adrenal axis and lead to many stress-related disorders by altering the immune mechanisms (Figure 1).⁶ Few studies have been conducted in India to understand the rationale for the stress among anesthesiologists, but not much information is available from South India.⁷ Therefore, we planned a questionnaire-based survey to understand their work stress, hobbies, recreational activities, exercise schedule, and family time spent to evaluate how this pilot questionnaire-based survey helped them in managing their stress in their own feasible way among the anesthesiologists from the southernmost part of Tamil Nadu (TN) and to encourage them to self-assess their lifestyle and the causes of stress and how to manage the same in future.

2. Materials and Methods

It was a cross-sectional, confidential in-house questionnaire-based survey. The study approval was obtained from the local Institutional Ethics Committee of Institutional Review (AEH, TVL-IEC/R/CS/2022/006) and adhered to the tenets of the Declaration of Helsinki. A set of 100 questionnaires with 20 questions under four headings were prepared including both open-ended and closed-ended questions and handed over personally to 100 anesthesiologists who attended the State-level Anesthesiology Continuing medical education (CMEs) between 1st June till 31st July 2022, conducted in two districts of the south-eastern part of TN. The questions were subjected to the anesthesiologist who accepted the informed verbal consent to fill out the questionnaire and requested to return at the end of the CME. All the questions had a minimum of three multiple-choice options. They were subdivided into four sections: a) Questions on Demographic profile, b) Questions on assessment of time spent with family members: travel time, c) Questions on the assessment of personal time spent: hobbies, recreational activities, exercise, and habits

of addiction d) Questions to assess the work pressure and the last question is on the self-assessment of their lifestyle and stress. Respondents were allowed to choose one option and the task description in the line provided in the questionnaire in the "others" column. The State level CMEs were selected because many practicing anaesthesiologists from varied institutions such as government, corporate and private hospitals, and postgraduates attend them frequently to avoid selection bias. Our sample size of 100 was based on the previous year's attendees for similar CMEs.

The Main outcomes expected were to analyze their occupational stress and to self-assess their family time spent per week. For traveling, the assessment of the personal time spent with regards to hobbies, recreational activities, and exercises, to self, determine the influence of work pressure over their routine activities and how to manage them through prioritizing and at last to self-assess their rationale for stress. Data were entered in an excel sheet and exported for statistical analysis.

2.1. Statistical analysis

With reference to a similar study by Calumbi RA et al., 44.6% of the anesthesiologists 11 had a negative perception about their quality of life; with 10% precision and 95% confidence interval (CI), the required sample size was 95. The sample size in our study is 70 respondents; for this sample, the calculated precision rate is 11%, with 95% CI. All data analyses were performed using the statistical software STATA, Version 14.0 (StataCorp, USA). Data were presented using descriptive statistics using frequencies (n) and percentages (%) for categorical variables and mean with standard deviation (SD) for continuous variables. The differences in the proportion of time spent with family, personal time, and work pressure with gender were assessed using the Chi-square test or Fisher's exact test. The level of statistical significance was set at 5%.

3. Results

One hundred questionnaires were distributed to the delegates attending the district anesthesia conference in Tuticorin and Tirunelveli, TN, Southern India. Seventy anaesthesiologists (70%) responded to the survey. The majority of them were working in Government hospitals(48.6%), 25.7% were working both in Government setup and doing private practice, 21.4% (15) were doing freelancing practice alone, and the rest of the respondents were working in corporate hospitals (4.3%; 3). The mean age of the participants was 39.5(12.2) years, 71.4% (50) of them were males, and 28.6% (20) were females. Most of the participants were married (72.9%) and had fewer years (<5 years) of experience in the field of anesthesia (52.9%; 37), only 21.4% (15) were experienced for more than 20 years, 17.1% (12) were with years of experience

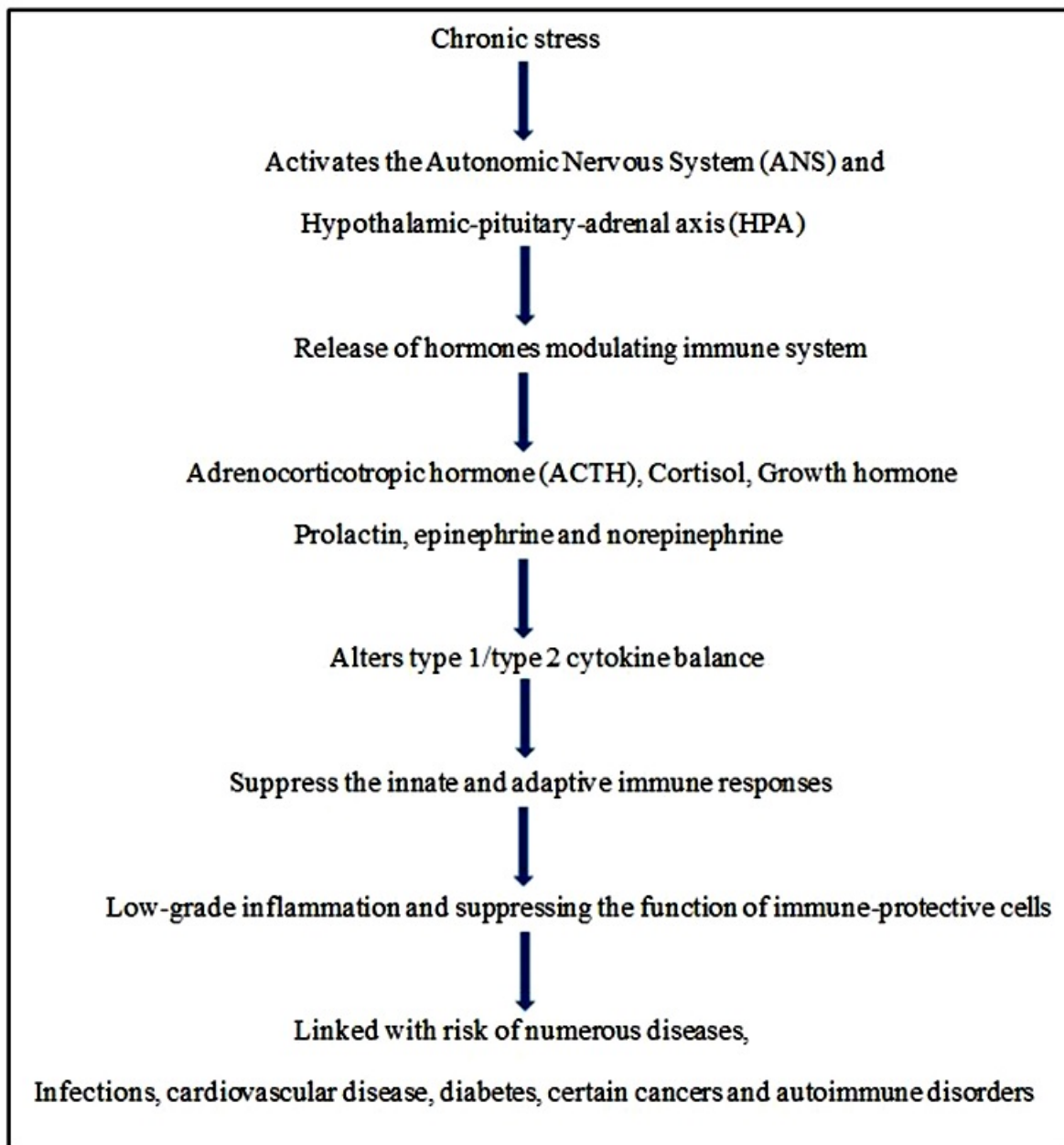


Figure 1: Flow chart showing the mechanism of chronic stress and dysregulation of immune system

between 10-20 and 8.6% (6) were between 5-10 years. It was highly satisfying to know that 70% (40) were not suffering from any systemic illnesses, only 14.3% (10) had diabetes, and 11.4% (8) had hypertension. But, the mean age of the respondents was only 39.5 years, and 18 of them developed diabetes and hypertension very early. The years of anesthesia practice and the median age of the participants correlate with the working hours of anesthesia practice. Since most of them were working in government hospitals, 62.9% had fixed duty hours of 5-12 hours a day, 24.3% (17) had >12 duty hours, and 12.8% (9) had < 5 hours per

day. (Table 1)

3.1. Family time spent

Only 17.1% (12) spend > 4 hours per day with family; among them, 18% (9) were male Anaesthesiologist (MA), and 15% (3) were female Anaesthesiologist (FA). Most of them spend (34.3%; 24) only 1-2 hours per day with family, 27.1% (19) spend 2-4 hours per day, and 21.4% (15) spend < 1 hour. FA occupies 28.6% of the total participants and spends less time with family than MA. Similarly, traveling time is also infrequent (1-2 times per year) in 42.5% (28) of

Table 1: Demographic characteristics of the study participants

	Frequency, n	Percentage, %
Number of participants	70	
Age, years		
Mean(SD)	39.5(12.2)	
Min – Max	25 to 73	
Gender		
Male	50	71.4
Female	20	28.6
Marital status		
Married	51	72.9
Unmarried	19	27.1
Job setting		
Private freelancing practice	15	21.4
Government job only	34	48.6
Government job with private practice	18	25.7
Corporate job	3	4.3
Year of experience		
<5 years	37	52.9
5 to 10 years	6	8.6
10 to 20 years	12	17.1
>20 years	15	21.4
Systemic illness*		
No	49	70.0
Diabetes	10	14.3
Hypertension	8	11.4
Dyslipidemia	4	5.7
Thyroid disorder	2	2.9
Asthma	2	2.9
Arthritis	3	4.3
Skin allergy	1	1.4
Total number of working hours in a day		
<5 hours a day	9	12.8
5-8 hours a day	23	32.9
8-12 hours a day	21	30.0
>12 hours a day	17	24.3

*One person may have more than one systemic illness

the participants; among them, 45.8% were MA, and 33.3% were FA. Of the participants who frequently travel with family which was 27.3% (18), among them 38.9% (11) were MA, and 22.9% (7) were FA. Again FA is spending less time traveling with the family compared to MA. (Tables 2 and 3)

3.2. Personal time spent

The personal time spent by the Anaesthesiologist was evaluated concerning hobbies, exercise, and recreational activities. 57.1% (40) had hobbies such as listening to music, gardening, and reading story books; among them, 52% (26) were MA, and 70% (14) were FA. Forty-five percent (32) do their exercises regularly, and among them, 16 (50%) spend 2-5 hours per week in exercise, 34.4% (11)

exercise <2 hours in a week and only 15.6% (5) do exercise > 5 hours in a week. Twenty-seven percent (19) engage in recreational activities such as dancing, sketching, painting, and cycling. Among them, 26% (13) were MA, and 30% (6) were FA. (Tables 2 and 3)

3.3. Habits of addiction

Forty-two percent (42.8%; 30) have addiction habits such as smoking and drinking alcohol.

3.4. Work stress

Forty-three (61.4%) feel stressed with the busy schedule of the duty hours in the hospital, 64% (32) were MA, and 55% (11) were FA. Work stress is evaluated based on the number of high-risk and VIP cases the Anaesthesiologist manages per week. But, to our surprise, 50% (35) attend <2 cases of HR cases per week. 32.9% (23) participants attended > 2 high-risk cases per week; both the MA (34%; 17) and FA (30%; 6) were equally efficient in managing the high-risk cases and VIP cases. But, 54.2% (38) feel stressed while attending HR cases, 28 (56%) were MA, and 10 (50%) were FA. Most of them, 19 (31.1%) stay calm and share their thoughts of stress with their family; 10 (16.4%) will react immediately to the situation and shout at others in the OR, and others indulge in yoga (9.8% (6)), food (11.5%; 7) and alcohol and smoking (9.8%; 6). Fifty percent of the participants were stressed during the first case of death on the table (DOT), only 17% handled with confidence and were not noted, but 33% were stressed and did not sleep well for a few days. (Figure 2)

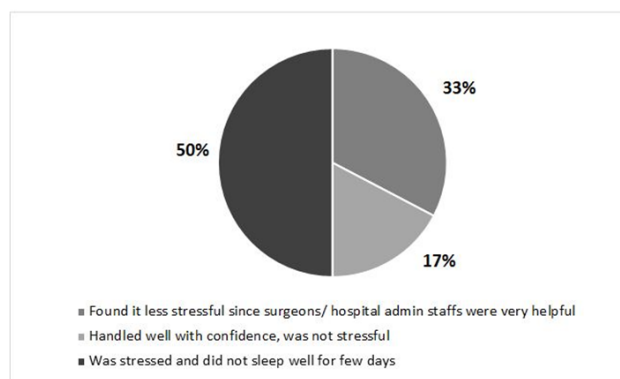


Figure 2: Pie chart describing the first death on table (DOT) case faced in their practice (n=52, 74.3%)

Figure 3 shows the results of a questionnaire on the anaesthetist's self-evaluation on how the survey was helpful for their lifestyle improvement. For example, 36% have planned to spend their time wisely with their family, 26% were planning to do regular exercise or yoga, 24% meant to do proper time management of their daily schedule, and 21% are planning to give some period of repose

Table 2: Life style of anesthesiologists through the self-assessment of working schedule, family and personal time spent

	Frequency, n	Percentage, %
Time spent with family		
Time spent with your family per day		
<1 hour a day	15	21.4
1-2 hours a day	24	34.3
2-4 hours a day	19	27.1
>4 hours a day	12	17.1
How frequently do you travel with family		
1-2 times/month	18	27.3
1-2 times/3 months	9	13.6
1-2 times/6 months	11	16.7
1-2 times/12 months	28	42.4
Time spent personally		
Do you have any hobbies?		
Yes	40	57.1
No	30	42.9
Do you do exercise regularly?		
Yes	32	45.7
No	38	54.3
Exercise per week in hours (n=32)		
<2 hours	11	34.4
2-5 hours	16	50.0
>5 hours	5	15.6
Do you engage in recreational activities?		
Yes	19	27.1
No	51	72.9
Habits of addiction*		
Smoking	13	18.6
Drinking	16	22.9
Social media	1	1.4
Work pressure		
High risk VIP cases in a week		
≤2 cases	35	50.0
>2 cases	23	32.9
No cases	12	17.1
Feel stressed at high risk cases		
Yes	38	54.2
No	9	12.9
Sometimes	23	32.9
How do you manage the stress		
By doing yoga or medication		
Will react immediately to the situation & shout	10	16.4
Will stay calm and share at home	19	31.1
By indulging in food		
Will engage in alcohol/smoking or others	6	9.8
Others	8	13.1
Do you feel stressed most of the time at the work place due to the busy schedule?		
Yes	43	61.4
No	8	11.4
Sometimes	19	27.1

*One person may have more than one habits of addiction

Table 3: Life style of anesthesiologists and the family time spent

	Male, n (%)	Female, n (%)	P-value*
Time spent with family			
Time spent with your family per day			
<1 hour a day	10(20.0)	5(25.0)	0.918
1-2 hours a day	18(36.0)	6(30.0)	
2-4 hours a day	13(26.0)	6(30.0)	
>4 hours a day	9(18.0)	3(15.0)	
How frequently do you travel with family?			
1-2 times/month	11(22.9)	7(38.9)	0.518
1-2 times/3months	6(12.5)	3(16.7)	
1-2 times/6months	9(18.8)	2(11.1)	
1-2 times/12months	22(45.8)	6(33.3)	
Time spent personally			
Do you have any hobbies?			
Yes	26(52.0)	14(70.0)	0.169
No	24(48.0)	6(30.0)	
Do you do exercise regularly?			
Yes	27(54.0)	5(25.0)	0.028
No	23(46.0)	15(75.0)	
Exercise per week in hours (n=32)			
<2 hours	9(33.3)	2(40.0)	>0.99
2-5 hours	14(51.9)	2(40.0)	
>5 hours	4(14.8)	1(20.0)	
Do you engage in recreational activities?			
Yes	13(26.0)	6(30.0)	0.734
No	37(74.0)	14(70.0)	
Work pressure			
High risk VIP cases in a week			
≤2 cases	25(50.0)	10(50.0)	0.904
>2 cases	17(34.0)	6(30.0)	
No cases	8(16.0)	4(20.0)	
Feel stressed at high risk cases			
Yes	28(56.0)	10(50.0)	0.890
No	6(12.0)	3(15.0)	
Sometimes	16(32.0)	7(35.0)	
Do you feel stressed most of the time at the work place due to the busy schedule?			
Yes	32(64.0)	11(55.0)	0.361
No	4(8.0)	4(20.0)	
Sometimes	14(28.0)	5(25.0)	

*Chi-square test/ Fisher's exact test; bolded p-value is significant (p<0.05)

for themselves and 17% are feeling comfortable with the present situation and doesn't bother to change.

Female anaesthetists are also equally proactive, ambitious and engage themselves compared to male anaesthetists in the busy practice. Most of them want to keep them fit; due to the long working hours they are not able to do it. It was disheartening to know that 42% of them have addiction to alcohol and smoking at the younger age. The reasons may be plenty but work-related stress also carries a major role. This chronic stress leads to health hazards, even though 70% were not suffering from any systemic illness; this might be due to the age of the included

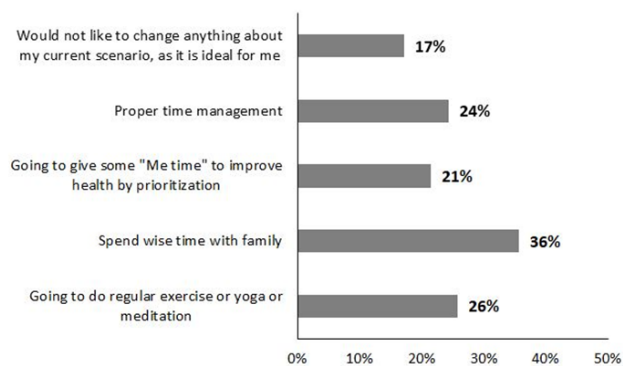


Figure 3: Chart describes the helpfulness of the self-assessment

patients.

4. Discussion

For an anaesthesiologist, stress can be either an acute response to a sudden unfortunate event like the death of a patient on a table or a chronic reaction to the working conditions.⁸ Anaesthesiology is the field of medicine involving constant stress the physicians and nurses since they have prime responsibilities towards managing critically ill patients. The prolonged stress may lead to Burnout symptoms such as sleep disturbances, anxiety, memory and attention deficit, nightmares and suicidal tendencies, addictions, and so on. The Medscape physician lifestyle report in 2016 revealed that the highest percentage of burnout occurs with anaesthesiologists (50%). They are more prone to stress and its systemic effects due to a high imbalance in their professional and personal/ family life. This happens due to their busy work schedule and night shifts.⁹ The self-recognition of stress, and identification of the cause for stress would help individuals to apply stress management methods.⁴ Many questionnaire-based studies have been done in foreign countries to analyze the work-related stress of Anaesthesiologists. These questionnaires have improved the awareness of the amount of stress they are experiencing instinctively.^{10–17} However, few Indian studies evaluate work stress and burnout in anaesthesia.^{7,18–22} This prompted us to perform a similar questionnaire-based survey in two cities in southern Tamil Nadu. In addition, we explored the family time spent and the amount of period of repose they gave to themselves.

Previous studies abroad revealed a comparatively lower rate of burnout and stress than our Indian studies. Only 25.8% were at risk of burnout in Austria,¹⁶ and 31% among professionals working in Portuguese ICUs¹⁵ against 40–84% of Indian professionals.²² Another discord between Indian and UK studies is that 90% of the Indian physicians working in critical care medicine were married, and their

mean age was 38 years against 42 years in the UK.²³ In a study done in Hyderabad, India, the overall moderate to severe stress levels were 40%, with habits of addiction to alcohol (21%), smoking (5%), and antidepressants (3%) among the critical care professionals.⁷ In our study, the stress levels were 61.4%, which is relatively high compared to other Indian studies. The stress results from work-life conflicts due to an imbalance between family, personal responsibilities, and job demands. Ganesh Bakshi S et al., in their most extensive questionnaire-based survey among Anaesthesiologists living in Mumbai on work-related stress involving 1178 respondents, it was despairing to know that 91% rated their stress as moderate to severe.²² The amount of stress was due to long hours of work, handling high-risk cases, working without free weekends and carrying their work back home. But, the authors have also observed that 83% of them were satisfied with the job they were performing, although the Authors have not identified a correlation between the job stress and the satisfaction. Another study including anaesthetists working in private hospitals alone had more compassion and job satisfaction. This might be due to the better working environment with the modern equipment's, infrastructure and working force in the private hospitals compared to government hospitals. This scenario would be still worse for the anaesthetists working in both private and government hospital setup.^{23,24} In our study, although 50% of the respondents take up < 2 high-risk or VIP cases in a week, 61.4%(43) felt stressed most of the time due to a busy work schedule. In addition, we analyzed the incidence of systemic illness among our study subjects after joining the anaesthesia, even though only 25.7% (18) developed diabetes and hypertension, most of them were young doctors (mean age 39 years). Forty-one percent (29) of the Anaesthesiologists developed addiction habits to alcohol/smoking developed after joining the anaesthesia department, this was quite alarming. The duration of working hours also plays an essential role in adding stress to the Anaesthesiologist's professional and family life. In a Mumbai study, 37% of the anaesthesiologists felt stressed, with >8 hours per day, and 76% felt working on weekends is stressful. We noted a relatively high number of subjects working > 8 hours per day (54.3%).²² Hence, most of them (55.7%) spend only < 2 hours with family daily, and 42.4% don't frequently travel with their families. Most of them don't do regular exercises (54.8%), among those who involve themselves in exercise spend less time that is only 2-5 hours per week, and also 72.9% don't engage in recreational activities, although they loved to. It was beyond belief that, we noted, a high-stress rate among female anaesthesiologists, similar to the study done by Hawton et al., who observed that higher rate of suicide among female anaesthesiologists than males.²⁵ Compared to other professions, doctors have significant differences in acknowledging their illnesses;

denial is common, especially in their psychiatric disorders relating to stress. After answering the questionnaire, most of them became conscious of their stress and spent less family and personal time. They wanted to improve their lifestyle in the future by spending wise time with family (36%), proper time management (24%), improving their health by prioritization (21%), going to do regular exercise or yoga or meditation (26%) and 17% felt the current scenario is ideal and cannot be changed. The limitations of the study include a small sample size; the questionnaire was only standardized and not validated and this was a pilot study hence comprehensive statistical analysis was not given foremost importance. Prioritization of work in a day, such as reducing multitasking, taking adequate rest, reserving some period of repose each day, and avoiding time wasters, can reduce the stressful environment.

5. Conclusion

We noted a higher incidence of stress among our study subjects living in southern districts of TN (61.4%). Decisively, it's solely in our hands; practicing a perfect balance between family and work will improve the quality of life of Anaesthesiologists. In addition, setting realistic goals in the work schedule, such as specific, measurable targets which are achievable, realistic, and done in a timely manner, will help in managing stress and prevent burnout.

What is known from this article?

1. High professional satisfaction does not mean there is low stress levels
2. Female anaesthetists are also equally ambitious to males and spend less time with family increasing their level of stress
3. These types of questionnaire based studies would help in self-realisation of the current living condition of each doctors being questioned. This awareness had helped in improvising and scheduling the family time and personal time
4. The patient care will improve if the stress is controlled or relieved in them.

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None.

7. Conflict of Interest

None.

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