

Weight Pattern of Junior Doctors During Residency

Received: 25 February 2023, **Revised:** 27 March 2023, **Accepted:** 29 April 2023

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Keywords:

resident doctor. Weight pattern, physical exertion, physical exertion.

Abstract

Residency period in a junior doctor's life is full of tension and physical exertion. During the tenure of residency for three years the parameters governing the health and weight of resident doctors keep changing every year. Weight of the doctor reflects the stress, exertion and responsibilities of the resident doctor. This study was carried out to study the changing weight pattern of the junior doctors during their tenure of three years. The weight of the doctors showed downward trend during the first year of residency. Second year proved to be the period of restoration of body weight almost regaining the body weight which was there at the time of joining as junior resident. Third year proved crucial because of the mental exercise of preparing the academic assignments as well as going through multiple text book as well as reference books. They either had minimum weight loss or significant weight gain due to lack of exercise and habit of munching.

1. Introduction

Although requiring high mental and physical exertion, the field of medicine has always attracted the students and is holding the first line of preference by the intellectual and bright students during their academic life since last many decades. Not only it fetches prestigious position in the society but it also brings satiety of serving the mankind.

The junior doctors face marked ups and downs in weight during three years of residency. The main culprits for their weight loss are physical exertion and sleepless nights. First year as a junior doctor tests the physical as well as mental capacity of the person. Residents work 40–80 hours a week depending on speciality and rotation within the speciality,^[citation needed] with residents occasionally logging 136 (out of 168) hours in a week.^[1] The day

for first year doctor starts early in the morning around 6am. Foodless days and sleepless nights are routine for a resident doctor. Physical exertion and heavy workload consumes most of their day time. About 40% of this work is not direct patient care, but ancillary care, such as paperwork.^[2] According to a study of 4,510 [obstetric-gynecologic](#) residents, 71.3% reported sleeping less than 3 hours while on night call.^[3] First year medical residents given an EKG arrhythmia-detection task performed significantly worse while sleep-deprived than when well-rested.^[2] In a survey of 3,604 first- and second-year residents, 20% reported sleeping an average of 5 hours or less per night, and 66% averaged 6 hours or less per night.^[4] [Sleep deprivation](#) increases rates of [medical errors](#) and affects [attention and working memory](#). Skipping regular meals while on duty is reported in about 70 % of residents. Competence is affected by the number of work hours, number of continuous work hours, regularity of sleep, and frequency and

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speed of handovers to the next shift. "Night float" seems to have particularly bad effects, due to the circadian misalignment cause by abrupt switches between day and night duty hours. , but is the most commonly used method of adapting to duty hour restrictions.^{[6][7][8]} Many studies have found performance impairment in medical residents due to sleep deprivation. The average sleep time was less for the same emergency department residents working night shifts than when working day shifts.^[9] Junior residents must accept all conditions of working, including very long work hours, and that they must also, in many cases, contend with poor help.^[5] The day starts at 6 am for the junior doctor After the routine fresh up running to the wards skipping the breakfast is a routine. After attending all the patients in the ward and passing relevant instructions to the paramedical staff ,he joins the seniors team for rounds and then either OPD or OT as per the schedule. Rushing here and there for patient care, managing the blood transfusions, sending investigations, collecting the investigation reports, and managing their radiological investigations consume most of the time of the residents. Excess work may be disproportionately assigned to junior doctors. Skipping lunch or just little snacks make up their lunch. Missed lunches accompanied by overburden of work promotes negative metabolism leading to weight loss of varying degree in most of the first year resident doctors. They face many symptoms of negative health like

- reduced appetite.
- lack of interest in food and drink.
- feeling tired all the time.
- feeling weaker.
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- reduced appetite.
- lack of interest in food and drink.
- feeling tired all the time.

2. Aims and Objectives

The principle aim of the study was to ascertain the effect of stress and strain of residency on junior doctor's life being directly reflected by change in body weight. Fluctuations in body weight directly indicates the stress and strain the resident doctor experiences during the residency period. The study would also help to suggest the authorities the means to reduce the burden of stress and strain on residents. Changes in the duty hours and providing adequate rest in , managing their regular lunch hours, inspiring them for yoga and meditation would definitely lead to improvement. Light physical exercises would be of immense help to boost up their physical as well as mental health. Relaxation during the weekends and periodic home visits for them will have positive impact on their routine life.

3. Methodology

The study was carried out at Dhiraj general hospital pipariya where post graduate specialization as well as super specialization training is being imparted. The study period was from may17 to may23. It is a questionnaire based retrospective as well as cross sectional study involving resident doctors of different specialities. Since doctors are learned persons always vigilant for body weight and keeping note of weight the task proved comparatively easy.

INCLUSION CRITERIA

- All resident doctors present at the beginning of the study and admitted thereafter.
- Resident doctors of clinical branches with emergency duties.

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- Resident doctors who were healthy at the time of joining the institute
- The residents who were willing to join and comply.

EXCLUSION CRITERIA

*Resident doctors of nonclinical branches and branched devoid of emergency duty.

- Resident doctor having systemic disease like TB, endocrine disorders e.g. DM and thyroid dysfunction.
- Resident doctors on steroid therapy.
- Resident doctors going to gym regularly or on diet control practice.
- Doctors not willing to join the study or comply.
- Doctors who left the study midway.

The participants were requested to live their routine life and keep periodic weight measurement.

OBSERVATION AND RESULTS

The results were analysed at the end of six years of study. Total 682 resident doctors joined the institute during the study period. Out of them 634 residents were found eligible and included in the study. The participating resident doctors were grouped under the heading of clinical branch residents with emergency duty and clinical branch residents with occasional emergency duty. The moto behind was that the cool branches residents face less of physical exertion as they hardly get emergency patients. They have to work sitting in chair in contrast to clinical branch residents who keep running at places in the hospital.

TABLE 1

Total no of admitted resident	874	
Total no of residents included in study	851	
Clinical branch residents with emergency duty	626	GROUP 1

Clinical branch residents with occasional emergency duty	138	GROUP 2
Non clinical branch residents	87	GROUP 3

The participating doctors' weight at the time of joining the institute was inquired and noted down.

TABLE 2 WEIGHT OF RESIDENTS AT THE TIME OF JOINING

Group 1 626 residents

Total no	Male residents	female residents
No of residents	507	119
Average weight	74.32 kg	57.85 kg
Range of weight	49-93.2 kg	42-68kg

TABLE 3 Group 2 138 residents

	Male residents	Female residents
No of doctors	96	42
Average weight	75.35	56.15kg
Range of weight	52-88	44-65

Table 4 Group 3 87 residents

	Male residents	Female residents
No of doctors	53	34
Average weight	72.4 kg	55 .6kg
Range of weight	50-84	47-70

The participating first year resident doctors' weight at the time of joining the institute was inquired and noted down. They were closely observed for one year and at

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the end of one year while transferring the charge of housemanship to new comers, their body weight was again noted down in the questionnaire form. Due attention was expedited to see that residents don't diverge from the stipulated norms of the study. The weight chart at the end of one year was as under.

Table 5 Group 1 626

	Male residents	Female residents
No of residents	507	119
Average weight at beginning of first year	74.32	57.85
Average weight at the end of first year	67.47kg	53.71kg
% change in weight	-9.21	-7.15

Table 6 Group 2 138

	Male residents	Fem residents
No of resident doctors	96	42
Average weight while joining	75.35	56.15
Average weight at the end of 1 st year	74.2kg	56.5kg
% change in weight	-1.53	+0.62

Table 7 Group 3 87 residents

	Male residents	Female residents
No of resident doctors	53	34
Weight at time of joining	72.4	55.6
Average weight	74.65kg	56.8 kg

after one year		
% change in weight	+3.10	+2.15

As can be seen from the above tables it is evident that the resident doctors of clinical branches with emergency duty reported significant weight loss. The second group of doctors also suffered weight loss but it was not to the extent of first group. The third group of doctors of nonclinical branches on the contrary reported weight gain could be explained by the minimum physical exercise as well as ongoing growth process for the age.

After completion of the first year the junior doctors now become second year resident and handover the charge to the newcomers. Their duties change and physical exertion diminished. The weight chart of the resident doctor starts improving and shows upward trend. The weight measurements at the end of second year is depicted in table 8,9 and 10.

WEIGHT CHANGES OF RESIDENT DOCTORS DURING SECOND YEAR.

TABLE 8 Group 1 626 residents

Total no	Male residents	female residents
No of residents	507	119
Average weight at the beginning of 2 nd year	67.47 kg	53 .71 kg
Average weight at the end of 2 nd year	72.84 kg	55.96
% change in weight	+7.96	+4.19

TABLE 9 Group 2 138 residents

	Male residents	Female residents
No of doctors	96	42
Average weight at the beginning of 2 nd year	74.2	56.5kg

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Average weight at the end of 2 nd year	76.35kg	57.87kg
% change in weight	+2.89	2.30

Table 10 Group 3 87 residents

	Male residents	Female residents
No of residents	53	34
Average weight at beginning of second year	74.65 kg	56.8kg
Average weight at the end of second year	76.93kg	57.96
% change in weight	3.05	2.04

At the end of second year, they enter the last year. Final year comes with newer type of tension and responsibility. The weight changes observed during the 3rd year are as shown in table 11.12 and 13
WEIGHT CHANGES DURING THIRD YEAR

TABLE 11 GROUP 1 636 residents

	Male residents	Female residents
No	507	119
Weight at onset of third year	72.84	55.96kg
Weight at end of third year	77.99	60.58kg
% change in weight	+ 7.07	+8.25

TABLE 12 Group 2 138 residents

	male	female

No of res	96	42
Weight at beginning of third year	76.35	57.87
Weight at end of third year	79.63	59.74
% change	4.29	3.23

TABLE 13 87 residents

	Male residents	Female residents
No of doctors	53	34
Average weight at the beginning of third year	76.93 kg	57.96kg
Average weight at the end of third year	82.45 kg	61.87 kg
% change in weight	7.17	6.74

4. Discussion

Working as a teaching faculty and observing the resident doctors daily routine life with eagle's eye for almost 6 years provided inspiration for this retrospective as well as cross sectional analytical study. It was a matter of immense pleasure to have close observation and intimate conversation with the resident doctors during the study period. As was expected they had significant weight loss during first year of residency following tiresome physical exertion. The body burns fat after exhausting the contents of the digestive tract and glycogen reserves stored in liver cells and after significant protein loss. After prolonged periods of starvation, the body uses the proteins within muscle tissue as a fuel source, which results in muscle mass loss. The group 1 residents engaged in emergency duty suffered weight loss of up to 10. The maximum weight loss reported in a resident weighing 92 was 15 kg. Second year

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provided them with a sigh of relief helping them to recover the weight loss incurred during the first year to a great extent. At the end of second year their weight recovered to a great extent. Third year cherished their weight gain making their life free of physical exhaustion and providing them enough opportunity for regular diet as well as fast food and dry snacks during late night readings. After completing the hands on training of various surgery and practical skills now with enhanced enthusiasm, they concentrate on completing their academic submissions. Paper presentation and poster preparation in second year under guidance of their teacher has boosted up their mood and enthusiasm. Now they spend more of their working hours in library referring various reference books and journals to update their knowledge of recent advances. Various modern modalities are adopted to compile the material pertaining to their thesis subject. After approval of thesis by teacher they now target their theory preparation. As is evident during third year their physical exertion comes down significantly. Intake of fastfood during reading hours increases their weight to certain extent. Munching dry snacks during late night reading is a common phenomenon. All these contributes to weight gain during last year of residency Third year cherished their weight gain making their life free of physical exhaustion and providing them enough opportunity for regular diet as well as fast food and dry snacks. In our study the third year residents had significant weight gain almost up to 8 percent. The awareness for weight gain diet consciousness and regular physical exercises amongst the female residents helped keeping excessive weight gain in check even during the third year.

5. Conclusion

During three years of residency triphasic scenario is evident in the weight chart of resident doctors as per the type of duty they are assigned. Physical exertion as well as mental exercise are the main determinants of the weight curve during the tenure of residency. First year ends with remarkable weight loss. Second year helps to recover weight loss to a great extent. Last year showing welcome weight gain in parity with the growth period.

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