



QUALITY OF LIFE ASSESSMENT AMONGST RESIDENT DOCTORS IN GOVERNMENT MEDICAL COLLEGES OF MAHARASHTRA ACCORDING TO WHOQOL-BREF PROTOCOL

Ruttuja Govind Chavaan

Senior Resident, Department of Plastic and Reconstructive Surgery, GGMC and Sir JJ Group of Hospitals, Byculla, Mumbai.

Chandrakant Gharwade*

Associate Professor, Department of Plastic and Reconstructive Surgery, GGMC and Sir JJ Group of Hospitals, Byculla, Mumbai*Corresponding Author

Tejas Prakash Vispute

Assistant Professor, Department of Surgical Oncology, TATA Memorial Hospital, Ernst Borges Marg, Mumbai.

ABSTRACT Background- Residency is a golden period in a medical professional's life not only forming a significant portion of the time but also life defining alterations that leave impressionable changes in the moldable mind of young residents - professionally and personally. Methods— An online and offline assessment of post graduate medical residents was conducted from July 2019 to March 2020 using WHO-QOL BREF protocol. Results— The study consisted of 556 medical post- graduate student volunteers [Females – 224 (40.29%) Males -332 (59.71%)] from Government Medical Colleges in Maharashtra studying in specialty and super-speciality courses. The QOL was rated as poor by 32.9% students followed by Good 27.5% followed by 25.9% saying that it was neither poor nor good and the Physical health domain had the highest median domain score followed by psychological and social followed by environmental health. Conclusion—Measures should be taken to provide a conducive environment for good physical, mental, psychological and social health of the resident doctors working in Government Medical Colleges in Maharashtra so that –1. A mentally and physically stronger and capable generation of professionals is created to provide excellent quality of health care to patients coming to Government hospitals who mostly hail from lower socioeconomic background. 2. An optimum quality of life is provided to the resident doctors.

KEYWORDS : Post Graduate Residents, WHOQOL BREF Protocol, Government Medical Colleges, Quality of Life

INTRODUCTION:

Residency program in India forms a significant part on the way to becoming a specialist / super-specialist medical professional however also appears to be the most neglected chapter in medical life of the young professional by Administration/government system. Some previous studies have assessed the QOL of medical students with the WHOQOL-BREF protocol^{[1],[2],[3]} but no such kind of study was conducted in Maharashtra medical colleges for residents. Residents undergo stressful learning environment that some may find it difficult to cope. Hence, it becomes important to assess the QOL and the factors influencing it to suggest suitable measures to government and hospital administrators to improve QOL if necessary.^[4]

RESEARCH METHODOLOGY:

A Cross sectional cohort study as per the WHOQOL-BREF protocol [Approved by the Ethical Approval Committee] was conducted in Government Medical Colleges in Maharashtra offering specialty/super-speciality courses from July 2019-March 2020 through online and offline mode.

PROCEDURE-

The WHOQOL-BREF questionnaire which is an international cross-culturally comparable quality of life assessment instrument^[5] was administered in an online/offline mode to the medical post graduate students, with their consent, assuring them of the maintenance of confidentiality.

The WHOQOL-BREF questionnaire contains two items from the Overall QOL and General Health. It also includes 24 items of satisfaction, these whole are divided into four domains: Physical health with 7 items (DOM1), psychological health with 6 items (DOM2), social relationships with 3 items (DOM3) and environmental health with 8 items (DOM4)^[6]

Each item is rated on a 5-point Likert scale. Each item of the WHOQOL-BREF is scored from 1 to 5 on a response scale. The response options range from 1 (very dissatisfied/very poor) to 5 (very satisfied/very good). It emphasizes the subjective responses rather than the objective life conditions, with assessments made over 4 weeks. The questionnaire includes four domains: physical health, psychological health, social relations, and environment according to which scores of quality of life are to be recorded and analyzed. The components of each domain are mentioned in Table 1. The scores are transformed into a

linear scale between 0 and 100, with 0 being the least favorable and 100 being the most favorable.^[7]

Raw domain scores for the WHOQOL were transformed to a 4-20 score according to guidelines.⁽⁶⁾ Domain scores are scaled in a positive direction (i.e., higher scores denote higher QOL). The mean score of items within each domain is used to calculate the domain score. After computed the scores, they transformed linearly to a 0-100 scale (WHO QOL scale)

The Questionnaire consisted of two instruments –

1. Socio-demographic characteristics of the participants like Age, Sex, Place of doing residency, Semester, Name of the speciality/Super-speciality, whether married or single, Residing with family or not and whether localite (Maharashtrian/not)

2. The WHO QOL BREF Questionnaire

Statistical Analysis- Domain score was calculated as per the methodology of WHOQOL BREF. (8)For three negatively framed questions (Q3 Q4 and Q26) scores were reversed. Domain scores were calculated by taking mean of the responses for that domain (Physical health: Q3, Q4, Q10,Q15,Q16,Q17,Q18; Psychological health : Q5,Q6,Q7,Q11,Q19,Q26; Social Relationship: Q20,Q21,Q22 and Environmental Domain: Q8,Q9,Q12,Q13,Q14,Q23,Q24,Q25). Domain score on the scale of 100 were calculated as $[(4 \times \text{domain mean}-40/16) \times 100]$

All the data is presented with mean +/- standard deviation for quantitative parameters and Number (percentage) for qualitative parameters. Independent t test was used to compare the domain scores between various parameters having two groups. One way analysis of variance was used to compare quality of life among different domains among year I, II and III followed by Bonferroni post hoc test. All the tests were considered at 5% level of significance.

Stata 15.1, Statacorp Texas was used for analysis.

RESULTS:

A total of 556 students filled in the questionnaire (Females – 224 [40.29%] and males- 332 [59.71%]). The mean age of students was 26.34+/- 2.55 years and the range was 22years- 35 years. Most of the students belonged to the age group of 22-30 years. The number of

students from all the residency years was almost similar (1st year- 185, 2nd year- 189, 3rd year- 182). However, students of 3rd semester (2nd year) formed the chunk. Most of the students were unmarried (78.96%), not staying with their families (85.43%), were not localites (57.01%).

The number of students in broad specialties of Medicine and allied and Surgery and allied fields is almost similar. (50.54% and 49.46% respectively) [Table 2].

The overall domain scores [Table 3] for the Quality Of Life of residents were as follows- which falls in the category of moderate QOL (45-65)

In Table 4, for comparison, sem 1 and sem 2 were grouped to make year 1, sem 3 and sem 4 (year 2) and sem 5 and sem 6 (year 3). The physical health domain and the social relationship domain were found to be statistically significant (p value of 0.0031 and 0.06 respectively) for year 1 and year 3 with year 2 being the intermediaries.

The Domain scores were statistically significant – higher for the medicine and allied branches for psychological and environmental health and borderline significant for physical and social relationship domain [Table 5].

The QOL was rated as poor by 32.9% students followed by Good 27.5% followed by 25.9% saying that it was neither poor nor good” which is similar to the Bullappa study[4] in which more than half the study population has quoted their QOL as being neutral, poor or very poor [Fig 1].

DISCUSSION:

Professional development of a resident doctor is a challenging time due to extensive and focused academic demands, long working hours, lack of autonomy, uncertainty about the future [9], sleep deprivation, lack of control over time management and work related stress^[10], competitive environment, peer and parental pressure.

In our study, the overall domain scores of resident doctors for physical health was more than that of psychological health and social relationship which was more than that of environmental health. The highest score in physical health corresponds to a similar study conducted in Karnataka by Bullappa et al.^[4]

We attribute the above findings to the fact that medical residency program in India itself occupies a significant portion of the time of a resident leaving them with less time for extracurricular activities and building up/ maintaining social relationships not to mention the poor canteen facilities and living conditions in in house hostel facility, commitments to their family.

In our study, the physical, psychological, Social relationship and environmental domain scores were similar for both the genders which contrasts with the Bullappa^[4] and Ghazanfar study^[11]. This may have been due to the fact that there has been provision of equal opportunities to both the genders with an almost equal number of female doctors (opting for surgical branches) and the delay in commitments in the form of marriage and children that could have otherwise hampered the domain scores.

The physical, psychological and environmental health in the unmarried students was found to be positively statistically significant than that of their married counterparts which may be attributed to a greater level of freedom at personal and professional level with the resultant lesser stress of relationship commitments [with spouse and other family members], being surrounded with likeminded colleagues and a greater agility to adjust to the surroundings physical and professional surroundings.

Also, frequently the spouse being a doctor and residing at some other place (the residents mostly stay at hostel facility in hospital campus provided by government on a sharing basis) with less family time to spare, this may have a negative psychological impact to the married counterparts.

Due to all India NEET admission process followed for Medical Post

graduation in India, in our study, 57% of the participants were non-localites (from out of Maharashtra) however this did not result in any change of domain scores which may be due to the fact that almost all the doctors doing medical post-graduation have to reside in hostel. Also, the workload and the on-call routine of a resident would make it next to impossible for them to go home.

The Medicine and allied branches had higher Physical, Psychological and Environmental Domain Scores in our study as compared to the Surgical and its allied branches which is similar to Ghazanfar study.^[11]

There are comparative data stress levels that suggest that there is a greater psychological overload in Surgical Residency as compared to the Internal Medicine Residency.^[12] Surgeons and stress go hand in hand ranging from dealing with huge surgical workloads to facing life and death situations on a daily basis, result in surgeons experiencing symptoms of emotional, physical and psychological burnout.^[11]

This corroborates with the fact that surgical residency is filled with considerable physical stress in the form of increased ambulation of residents to respective wards and dressings, operation theatres, ICUs, Emergencies, not to mention the prolonged operative hours.

The super-speciality residents' group had lesser scores of Physical Health, Psychological health and Environmental Health as compared to that of speciality residents. The super-speciality residents were mostly above the age of 27 years. Age being a major determinant in the quality of life of a physician, older physicians have been shown to have a higher frequency of burnout phenomenon as compared to younger physicians.^[13]

There has been found an inverse correlation between depersonalization scores and age of the residents^[14] and aging has been found to be associated with increased cortisol response to stress.^[15] In our study there was a strong negative correlation between age and psychological health domain score similar to that of Ghazanfar study.^[11] This can be explained considering that most of the super-speciality residents are beyond 27 years of age, mostly married and some with children to look after at a stage in life where good quality of life along with accommodation, future settlement and lack of surety of a successful professional career become stressing factors.

Students in the para-clinical subjects had higher mean scores in all the domains as compared to those from clinical specialties.^[16] This may be due to the fact that residents in Clinical branches not only have a higher mental stress of facing patients and their relatives but also in critical decision making and handling emergencies on a day-to-day basis.

The physical health domain score of the 1st year residents was low as compared to that of 3rd year residents (p-value-0.002). The 3rd year students had a higher mean scores in all the 4 domains however 3rd year students were not statistically significant as compared to 1st and 2nd years except that of physical health domain as mentioned above which may be due to the fact that physically taxing work of dressings, blood collections, accompanying patients for certain procedures like radiological procedures etc. is usually done by the junior clinical residents whereas with the final year residents usually lies the responsibility of planning and execution of treatment of the patient.

Potential causes of student distress may be substantially increased scholastic workload^{[3],[49]}, an unstructured learning environment, lack of time for recreation, financial issue concerns, lengthy assignments, abuse by seniors and experiencing, handling human sufferings and seeing deaths on day-to-day basis.^{[17],[18]}

Verbal abuse by seniors, direct or indirect, which is a part and parcel of residency programs, not only seriously affects students' confidence^{[19],[20]} but also negatively affects the learning environment^{[19],[20],[21]}, influences doctors speciality choice^{[19],[20]}, adversely affects their care of patients^[20], decreases institutional loyalty^[21] and erodes mental health^{[20],[21],[22]}.

The fact that residents are expected to be proficient clinicians, educators, researchers and administrators by the time they have completed their training may not only result in decreased confidence levels but also in doubtful self-worth and suicidal tendencies.^[23]

The comments section of the questionnaire gave insights into the minds of the residents. Though many of the residents described this study as a “nice approach to know the personal status of the resident”, a study that “may bring some change”, there was also the attitude that “no one cares about the resident doctor” with some of the comments highlighting their depressed state, the quality of life being described as “pathetic” with “minimal co-operation from our own fraternity” and of the minuscule stipend, life as a doctor was described as “difficult” There were also suggestions to “improve the work culture” “Efficient grievance redressal by hospital and civil authorities, regular psychological assessment of residents” “Limited work hours”, “making an arrangement to stay with family”

There was also the dismay of “Many such assessments have been done with no changes at all. When will things actually change?”. Suicidal thoughts were also voiced mostly due to the “long working hours without a break, poor living conditions and stipend, harassment by seniors resulting in no more interest to learn the subject.”

The study helped many of the participants to retrospect on their quality of life especially their physical and mental health [Table 6].

RECOMMENDATIONS:

Following are our recommendations to the Government and hospital administration to improve the overall well-being of resident doctors —

1. “Burnout is not an indication of personal failing but rather of a failing working and social environment”.^[25] Structural institutional changes such as fixing resident doctors work hours (for e.g. 8 hours shift) along with increase the total number of PG seats, without compromising the quality or continuity of care of patients or resident education^[26] and Individual level interventions in the form of mindfulness based approaches and small group discussions would be effective.^[27] Structural institutional changes would be more effective than individual level interventions.^[28]

2. To increase the efficacy of resident education, tasks that serve no educational or clinical value (that tend to occupy so much of our residents' working hours) should be minimized. Addition of other para-clinical staff should be considered for such purposes. Shortage of manpower in Government setup compels the residents to also get involved in other activities other than the clinical activities that is energy and time consuming.

3. Faculty- student mentoring programs ^{[29],[30]} sponsor through institutions social events would help in fostering relationships with colleagues and faculty, promote resident well-being, reduce stress and help prevent burnout.

4. Seniors and junior resident doctors' hierarchy should be relooked at and strict action taken against bullying at workplace.

5. Student support programs, “buddy programs”^[31]- can be designed to promote mentorship of junior students by senior students which will lower student stress and would also help to flatten the hierarchy.

6. There is a need for strong psychosocial support, professional help, easy and free access to adequate counseling services to tackle the mental health issues in medical professionals. Students should be made aware of their mental health profiles and treatment/support resources available. Many students may not be comfortable seeking care for mental health problems from their respective institutions and should be given the opportunity to receive offsite care of their choice with assurance of confidentiality.

7. Time to time regular implementation of Stress and time management programs

8. Inter and Intra- departmental peer discussion ^[32] groups to provide opportunities for students to express and share feelings. Such shared reflections would help understand that the struggles that they face are not unique to them but would also provide insight into how their colleagues solve similar problems.

9. Appropriate time off during holidays and between rotations ^[33] to allow the residents to decompress from rigors of training, encouraging

students to promote personal health with regular physical activity and regular sleep would be of benefit

10. Health insurance to resident doctors to be provided by hospital administration/ Government and the option to choose the hospital as per their priority.

11. Good living in campus accommodation having attached washrooms, good quality food and canteen facility, laundry along with other facilities required for healthy living like Gym, outdoor and indoor games etc.

12. Centralized pay structure for residents in all medical colleges in India

CONCLUSION-

Since residency is considered to be the gold standard of medical education specialization and prime source of practical learning for newly trained doctors with residents being the frontline workers in a Government Hospital, improvement in their working and living conditions is a must and there is a dire need to reassess their care and training process that aims at improving their quality of life and education .It is essential to equip the residents with necessary skills to identify and understand personal distress, to seek assistance for the same and develop strategies to promote their own well- being to lay the foundation of a strong and capable professional. This study helps to reassess the overall quality of life of resident doctors and has provided recommendations to the Government/hospital authorities to improve the same.

TABLES

Table 1: Different domains for the quality of life and their components according to WHO-QOL-BREF protocol

DOMAIN	COMPONENTS WITHIN DOMAIN
PHYSICAL HEALTH	Activities of Daily Living
	Dependence on Medical Substances and Medical Aids
	Energy and Fatigue
	Mobility
	Pain and Discomfort
	Sleep and reset
	Work Capacity
PSYCHOLOGICAL	Bodily Image and Appearance
	Negative Feelings
	Positive Feelings
	Self Esteem
	Spirituality/Religion/Personal Beliefs
SOCIAL RELATIONSHIPS	Thinking/Learning/Memory/Concentration
	Personal Relationships
	Social Support
ENVIRONMENT	Sexual Activity
	Financial Resources
	Freedom, Physical Safety and Security
	Health And Social Care- Accessibility and Quality
	Home Environment
	Opportunities For Acquiring New Information and Skills
	Participation In and Opportunities for Recreation/Leisure Activities
	Physical Environment (Pollution/Noise/Traffic/ Climate)
Transport	

Table 2: Factors and their distribution in the study

Factor		Distribution N (%)
Age		Mean = 26.34 SD = 2.55
Gender	Female	224 (40.29%)
	Male	332 (59.71%)

Semester	1	154 (27.7%)
	2	31(5.58%)
	3	174 (31.29%)
	4	15 (2.7%)
	5	153(27.52%)
	6	29(5.22%)
Marital Status	Unmarried	439 (78.96%)
	Married	117 (21.04%)
Stay with Family	No	475 (85.43%)
	Yes	81 (14.57%)
Localite	No	317 (57.01%)
	Yes	239 (42.99 %)
Speciality	Medicine and allied	281 (50.54%)
	Surgery and allied	275 (49.46%)
Year of Residency	I	185 (33.27%)
	II	189 (33.99%)
	III	182 (32.73%)
Residents	Broad-Speciality	503 (90.46%)
	Super-speciality	53 (9.57 %)
Stream	Clinical	511 (92.24%)
	Paraclinical	45 (8.09%)

Table 3- Overall Domain Scores

Domain	Overall Score	Median (IQR)
Physical Health	52.35+/- 15.18	53.57 (42.86-60.71)
Psychological Health	50.34 +/- 17.00	50.00 (37.50-62.50)
Social Relationship	50.08+/- 17.99	50.00 (41.67-66.67)
Environmental	47.79 +/- 17.28	46.88 (34.38-59.38)

Table 4: Association of year with different Domains of Quality of Life

Domain	Year 1	Year 2	Year 3	p-value
Physical Health	49.92 ±15.31	51.95 ±15.31	55.24 ±14.51	0.0031
Psychological Health	49.03 ±18.06	50.44 ±16.71	51.58 ±16.16	0.3556
Social Relationship	48.56 ±17.29	49.1 ±18.35	52.66 ±18.12	0.0600
Environmental	46.52 ±17.17	46.89 ±17.21	50.02 ±17.33	0.1035

Table 5: Association of various factors with different domains of Quality of life

Domain	Female	Male	p-value
Physical Health	52.82 ±14.56	52.03 ±15.6	0.5484
Psychological Health	50.56 ±16.16	50.2 ±17.56	0.8082
Social Relationship	49.89 ±16.7	50.21 ±18.84	0.8347
Environmental	49.01 ±16.83	46.97 ±17.55	0.1722
Domain	Unmarried	Married	p-value
Physical Health	53.16 ±15.08	49.3 ±15.26	<0.0001
Psychological Health	51.86 ±16.54	44.66 ±17.54	<0.0001
Social Relationship	49.75 ±17.26	51.32 ±20.53	0.4038
Environmental	49.01 ±17.29	43.22 ±16.53	0.0012
Domain	Away from Family	Stay with family	p-value
Physical Health	52.57 ±15.25	51.06 ±14.83	0.4076
Psychological Health	51.04 ±17.15	46.3 ±15.56	0.0202
Social Relationship	49.85 ±17.53	51.44 ±20.57	0.4629
Environmental	48.21 ±17.54	45.33 ±15.54	0.1659
Domain	Not Local	Localite	p-value
Physical Health	52.39 ±14.59	52.3 ±15.97	0.9466
Psychological Health	50.45 ±16.08	50.21 ±18.17	0.8705
Social Relationship	49.68 ±17.21	50.61 ±19	0.5486
Environmental	47.87 ±17.39	47.69 ±17.16	0.9007
Domain	Medicine Allied	Surgery Allied	p-value
Physical Health	53.5 ±13.88	51.18 ±16.35	0.0724

Psychological Health	52.64 ±16.71	48.00 ±17.00	0.0012
Social Relationship	51.38 ±17.29	48.76 ±18.62	0.0858
Environmental	50.24 ±17.09	47.28 ±17.14	0.0007
Domain	Speciality	Super Speciality	p-value
Physical Health	52.90 ±15.17	46.83 ±14.38	0.0056
Psychological Health	51.25 ±16.75	41.98 ±17.45	0.0002
Social Relationship	50.36 ±17.64	47.01 ±21.00	0.1983
Environmental	48.72 ±17.12	39.33 ±16.16	0.0002
Domain	Clinical	Para-clinical	p-value
Physical Health	51.75 ±15.43	59.05 ±09.78	0.0024
Psychological Health	49.48 ±16.98	60.85 ±13.91	<0.001
Social Relationship	49.37 ±18.03	57.95 ±15.64	0.0026
Environmental	46.97 ±17.29	57.99 ±13.03	0.0001

Table 6- Strengths and Drawbacks of the Study

Strengths Of The Study
1. First study to describe the Quality of Life of Resident doctors of Government Medical Colleges in Maharashtra using a validated tool of WHO QOL BREF protocol.
2. Appreciable response rate has helped us gain insight into the current scenario, the scope for improvement and ways to achieve the same.
3. Remarks'' section at the end of the questionnaire has given insight into the individual perception of residency and solutions to improve the same.
Drawbacks of the study
1. Cross sectional study and thus causal interpretation between various factors may be hampered.
2. The data collected is from a self-reported questionnaire and thus may result in over/under estimation of personal effects.
3. The generalization of the study may be affected as it was restricted only to Government Medical Colleges of Maharashtra.

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Dr. Chandikant Gharwale,
Associate Professor, Department of Plastic and Reconstructive Surgery, GGMC and Sir JJ Group of Hospitals, Byculla, Mumbai 400008
Mob. No. 9011107592 Email address - rtmaja.chavan@gmail.com

Original Article:

Quality of life assessment amongst Resident doctors in Government Medical Colleges of
Rattuja Govind Chavase, Chandrakant Gharwade, Tejas Prakash Vitopar

1. Senior Resident, Department of Plastic and Reconstructive Surgery, GGMC and Sir JJ Group of Hospitals, Byculla, Mumbai.
2. Associate Professor, Department of Plastic and Reconstructive Surgery, GGMC and Sir JJ Group of Hospitals, Byculla, Mumbai.
3. Assistant Professor, Department of Surgical Oncology, Tata Memorial Hospital, Ernst Rogers Marg, Mumbai.

Rationale of the study:

Residency program in India forms a significant part on the way to becoming a specialist / super-specialist medical professional however also appears to be the most neglected chapter in medical life of the young professional by Administration/government system. Residents undergo stressful learning environment that some may find it difficult to cope. Hence, it becomes important to assess the QOL and the factors influencing it to suggest suitable measures to government and hospital administrators to improve QOL, if necessary.

Declaration:

Hereby, We the Authors confirm that the manuscript has not been published elsewhere and is not under consideration for publication by any other journal.

Corresponding Author:

Dr. Chandrakant Gharwade, Associate Professor, Department of Plastic and Reconstructive Surgery, GGMC and Sir JJ Group of Hospitals, Byculla, Mumbai 400008.
Mob. No. 9011107592 Email address - rattuja.chavase@gmail.com

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