

Job Satisfaction Among Medical Officers in a University Hospital: A Qualitative Study

Muhammad J^a, Miswan N^a, Idris NS^a, Mohamad R^a

^aSchool of Medical Sciences, Universiti Sains Malaysia,

ABSTRACT

INTRODUCTION: Job satisfaction among medical officers (MOs) in university hospitals is crucial for both healthcare delivery and medical education. High job satisfaction is linked to improved productivity and mental well-being, while dissatisfaction can lead to errors, lower patient satisfaction, and higher employee turnover. Although many studies have examined job satisfaction in Malaysian healthcare settings, most have focused on public hospitals. This qualitative study aimed to explore the experiences of MOs actively working in a Malaysian university hospital to gain a better understanding into the factors influencing their job satisfaction. **MATERIALS & METHODS:** Using a phenomenological approach, 18 MOs were interviewed through semi-structured, in-depth interviews. The interviews were audio-recorded, transcribed verbatim, and analysed using thematic analysis. Guided by Herzberg's Two-Factor Theory, we explored motivators and dissatisfiers in the MOs' work environment. **RESULTS:** Four main themes emerged: (1) enjoyment in patient care including aspects of diagnosing, treating, and communicating with patients, (2) personal fulfilment in relations to family time and educational responsibilities, (3) positive work culture comprising of teamwork and hospital facilities, and (4) distress related to hospital systems, salary, and career advancement. **CONCLUSION:** This study elucidated how different factors contribute to job satisfaction and dissatisfaction among service and postgraduate MOs. These findings underscore the need for targeted strategies by hospital management and policymakers to address these dynamics, in order to sustain a motivated medical workforce in university hospitals.

Keywords:

Satisfactions, Job, Physicians, Hospitals, University

Corresponding Author

Dr. Juliawati Muhammad
Family Medicine Specialist, Department of
Family Medicine, School of Medical
Sciences, Universiti Sains Malaysia, Kubang
Kerian, Kelantan, Malaysia
Email: juliawati@usm.my

Received: 18th September 2024; Accepted:
27th April 2025

Doi: <https://doi.org/10.31436/imjm.v24i04.2717>

INTRODUCTION

University hospitals serve dual functions, providing both medical care to patients, and offering clinical training to current and future health professionals.¹ These institutions are also frequently known as teaching hospitals and they are widely recognized for their contributions to quality care, particularly for managing complex cases using advanced technologies, while conducting clinical innovations.² However, these achievements come at a cost. In the Malaysian setting, healthcare workers in university hospitals encounter different challenges from those working in government hospitals, which can contribute to psychological stress and job dissatisfaction.³ Studies have shown that the training and the dual demands of education and clinical service may lead to fragmented care processes, contributing to workplace stress and dissatisfaction among healthcare providers.³ When left unaddressed, these gradients can

negatively affect both patient care and the quality of medical education provided in these institutions.⁴

Internationally, teaching hospitals face similar challenges related to dual service and academic missions. Studies conducted in the West have shown that doctors working in university hospitals often operate in high-stress environments due to the concurrent demands of patient care and academic obligations, leading to dissatisfaction due to high workloads and stress.^{5,6} Apart from the training responsibility, unique to Malaysian university hospitals are the financial constraints and discrepancies in remuneration compared to private sectors or government hospitals.⁷ This aligns with findings from other developing nations, such as Vietnam, where resource limitations in addition to dual-role expectations exacerbate job dissatisfaction.⁸

Job satisfaction is a complex concept, with various definitions depending on the perspective. Earliest definitions describes job satisfaction as an affective feelings arises from individual's work experience.^{9,10} However, in recent years, many authors have defined job satisfaction based on the positive or negative variables that influence individual's overall appraisal of their job.¹¹⁻¹³ In healthcare setting, job satisfaction has a profound effect on both healthcare professionals and patients, as the experiences of both groups can be interlinked, particularly during medical consultations.¹⁴ High job satisfaction among healthcare workers is associated with improved productivity, lower turnover rates, and better mental health, whereas dissatisfaction can result in higher error rates, decreased patient satisfaction, and higher employee turnover.¹⁵⁻¹⁷

Numerous studies on the job satisfaction of physicians have been done in Malaysia, but many of them focuses on the government sectors. Some research has shown high levels of satisfaction, while others indicate significant dissatisfaction in relation to working conditions such as administrative burden and benefits provided.¹⁸⁻²⁰ Thus, this study aims to explore experiences of job satisfaction among medical officers (MOs) in one of the university hospitals in Malaysia. By exploring this issue, we would like to describe the underlying reasons of satisfaction and dissatisfaction, besides suggesting improvement for them. In this study, we adopted Herzberg's well-established Two-Factor Theory of job satisfaction.¹² Herzberg's theory distinguishes between hygiene and motivator factors as two components in job satisfaction among workers in general. According to Herzberg, while hygiene factors can prevent dissatisfaction, true job satisfaction arises from the presence of motivators. The ideal situation is when both factors are met, employees are not only free from dissatisfaction but are also highly motivated and satisfied with their jobs.

MATERIALS AND METHODS

This study employed a qualitative approach using a phenomenological methodology to explore job satisfaction among MOs in university hospital. The study was conducted at one of the teaching university hospitals

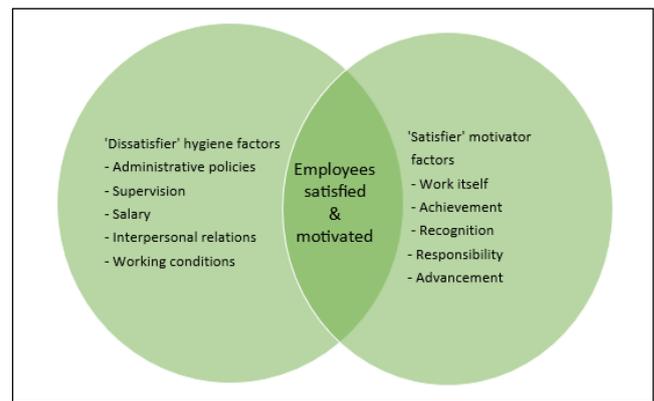


Figure 1 Herzberg's Two-factor Theory

at northeastern regions of Peninsular Malaysia. This hospital housed both service and postgraduate MOs currently pursuing Master's degree in medicine. Participants were recruited using purposive sampling including snowball sampling. A total of 18 participants were interviewed until thematic saturation was reached. Saturation was identified when no new codes, subthemes, or themes emerged during data analysis, as assessed through an iterative review of the transcripts and a comparison of codes generated from subsequent interviews.

Study advertisements and Google forms were distributed to MOs from various medical and surgical departments. Those who agreed to participate were then contacted, consented and interviewed from March to August 2023 in person or online. One-to-one interviews were conducted in the mother tongue of the 18 participants and audio-recorded.

There were two tools used in this study which were socio-demographic form and semi-structured interview guide. Firstly, socio-demographic information of participants was documented. The researcher employed a semi-structured interview guide to conduct in-depth interviews. Open-ended questions were used for participants to share stories in their own words. Probing questions were used to explore specific aspects of the interview more deeply. The interview primarily focused on participants' perceptions of job satisfaction, their experiences working in the university hospital, factors affecting their job satisfaction, and areas that need improvement.

A pilot study involving three participants were conducted,

and the transcripts were reviewed by researchers with experienced in qualitative studies to assess question clarity. Based on feedback, adjustments were made to the interview guide questions. All interviews were transcribed verbatim and analysed using N-Vivo software, following Braun and Clarke's six-step thematic analysis method.²¹

To achieve methodological rigor, steps were taken to ensure reliability and validity of this study. Regular discussions among researchers were done to prevent any drift in the definition of the codes and themes. A master table of main themes was created by grouping generated codes from the interview transcriptions, and selected themes were chosen based on the consensus of all researchers. In addition, member checking by sharing themes derived from the analysis with some participants to verify the accuracy of the research findings were also done, and all agreed on the themes derived from their interviews.

RESULTS

A total of eighteen MOs participated in the study.

Table I Demographic information of participants

Demographic information		Total
Gender	Female	14
	Male	4
Age (years old)	30 - 40	18
Types of MOs	Service	8
	MMed	10
Departments	Medical-based	12
	Surgical-based	6
Working duration in university hospital (years)	1 – 2	9
	3 - 5	6
	> 5	3

The thematic analysis of the interviews revealed four themes as shown in Table II and Figure 2. These include: (1) enjoyment in patient care; (2) personal fulfillment; (3) positive work culture; and (4) Distress with system, salary and career opportunities.

Table II Job satisfaction experiences among MOs in university hospital

Themes	Sub-themes	Axial coding	
Enjoyment in patient care	Ability to treat patient optimally	Correct diagnosis	
	Communication with patient	Active interaction with patients Patient's education	
	Seeing progress of patient's condition	Patient's compliant to treatment Shared decision with	
Personal fulfillment	Work-life balance	Spending time with family	
	Educational responsibilities	Improvement in knowledge and skills Teaching junior doctors and medical students	
Positive work culture	Good team work	Supportive colleagues Guidance from lecturers and specialists Helpful supporting staffs	
		Hospital supportive environment	Conducive studying Advanced medical equipment Non-burdensome clinical works compared to KKM hospitals
	Distress with system, salary and career development	Patient's record keeping	Non-user friendly computerized system Non-systematic manual patient's record
Salary and allowances		Underpaid salary Low oncall allowances rate	
Career advancement difficulties		Limited slot for service MO to further study Stress-coping in post-graduate study	

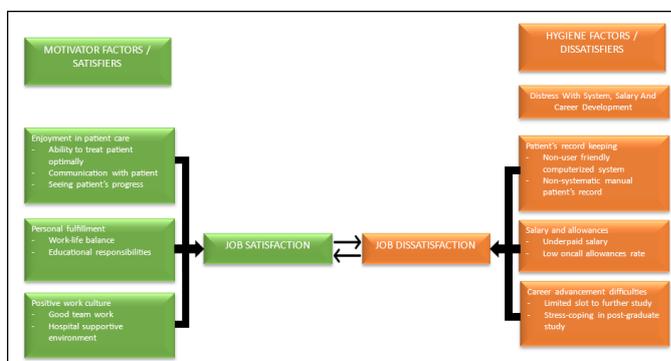


Figure 2 Factors influencing job satisfaction among MOs.

Theme 1: Enjoyment in Patient Care

Most of the MOs attributed their satisfaction to their work in providing the best patient-care. Both service and MMed MOs shared the same values despite having different job responsibilities.

Ability to Treat Patients Optimally

A significant aspect of job satisfaction for MOs is their ability to provide quality care. Many MOs expressed that accurately diagnosing and effectively treating patients contributes greatly to their satisfaction as doctors.

"For me, job satisfaction is when we can use our knowledge to diagnose patients. When a patient comes with various complaints, we can come up with the correct diagnosis and treat the patient." (P10, MMed MO)

Communication with Patients

Other MOs expressed that active interaction with patients brings joy in their work. As one participant compared her previous nature of work that lack of communication with patients:

"When I was in the administration office, we were only in charge of management tasks. After experiencing that, I felt unsatisfied. I didn't have contact with patients." (P13, service MO)

Educating patients about their illnesses and treatment plans was also highlighted as this allows MOs to impart knowledge and see the impact of their efforts, as mentioned by P7:

"Providing knowledge to patients. Giving them an understanding of their illness. At that point, that is my satisfaction." (P7, service MO)

Patient's Progresses Well

As a result of their effective management and interactive relationships with patients, many MOs are able to see significant progress in their patients which is another major contributor to job satisfaction.

"When my patients are healthy or improved... when they are discharged in good health, I feel that is my satisfaction. Because what I provided, helped my patients to recover." (P12, service MO)

Many MOs find it rewarding to witness the progress of their patients as a result of shared decision-making with patients to make informed choices about their treatment plans, which subsequently leads to patient compliance with the treatment. This enhances job satisfaction by

fostering a sense of partnership and trust. One participant expressed this sentiment:

"I feel happy when the patient understands and accepts what we discussed. And then they followed the advice we gave regarding the necessary treatment and other aspects related to their illness." (P19, service MO)

Theme 2: Personal Fulfilment

Achieving personal fulfilment by balancing career development and family life is essential for MOs. Many participants found self-contentment through both career growth and fulfilling family responsibilities.

Work-Life Balance

The ability to balance work demands with family time highlights the importance of family among MOs as their pillars of support. P18 emphasized the importance of this balance:

"Because balancing work and family is important for me. That is my happiness even though I am busy at work, but I still have time with my family." (P18, MMed MO)

Educational Responsibilities

As MOs in a training centre, many valued the opportunities available at the university hospital to improve their knowledge and skills. Even though they are not bound by academic requirements as MMed MOs, majority of service MOs felt the responsibility to improve themselves.

"So when I joined here (university hospital), I was able to learn more to improve my knowledge in this field. I learned procedures. So when I accomplish a skill or gain new knowledge in my field, I feel satisfied." (P17, service MO)

Additionally, actively engaging in educational roles by teaching junior doctors is also fulfilling for most of them.

"Being able to share knowledge with the houseman makes me feel satisfied as a medical officer. Oh, today I was able to share something with my houseman. Hopefully, they gain something when they followed my rounds." (P12, service MO)

Theme 3: Positive Work Culture

A positive work culture, encompassing both human resources and workplace environment, are also highlighted.

Good Teamwork

All participants expressed that effective teamwork is crucial in their demanding work environment, particularly collegial support, which helps MOs navigate challenging situations, as shared by P14:

"And (I have) teammates who can help when we face problems or dilemmas in managing patients...there are teammates who are willing to help us even when their shift is over... When we are post-call, our colleagues are willing to help with our work." (P14, service MO)

The guidance from specialists, who also serve as lecturers in this training hospital, are highly valued by all MOs.

"They give me a lot of guidance. If there's anything I need to consult on, they are very willing to guide us... especially in managing complicated cases, and I have learned a lot from the lecturers about managing those cases." (P2, MMed MO)

However, concerns were raised regarding the quality of house officers, who were seen as incompetence and increasing the work burden of MOs.

"I feel dissatisfied. MOs have to do everything. The work that housemen should be doing is also done by MOs." (P10, MMed MO)

Many participants agreed that house officers need to be more proactive and take full advantage of the benefits of working in a university hospital. Additionally, hospital should invest in better training for house officers to ensure they perform effectively and uphold the standards of a university hospital.

Supportive Hospital Environment

A supportive environment with adequate facilities also contributes to satisfaction among participants. They

appreciated the conducive learning facilities and advanced medical equipment, noting the benefits of working in a university hospital. P16 noted the advantage of having advanced equipment:

"Especially the endoscopic lab, the equipment is complete. There are even extras that other places don't have. So the lab here is quite advanced." (P16, MMed MO)

Despite having top-notch learning and patient-care facilities, many participants felt that certain hospital infrastructures need improvement, particularly the on-call rooms and parking facilities. Although some stated that these issues do not lead to dissatisfaction, a facilitative environment can add values to the working conditions.

"Overall, I am satisfied with the infrastructure provided here. However, what could be improved is the number of parking spaces... perhaps designated parking for staff so that we don't have to park far away and spend time searching for parking before starting work." (P2, MMed MO)

In addition to the physical facilities, number of patients and workload in the university hospital were more manageable compared to other facilities, allowing them more time for academic activities.

"The difference at HUSM is that there aren't as many patients as in KKM, in my opinion. So we have more time to study." (P5, MMed MO)

Theme 4: Distress with System, Compensation and Career Development

This theme highlights emerging issues from the participants that, when unmet, lead to significant sources of their dissatisfaction.

Patient's Record Keeping

Inefficient computerized systems were frequently cited by MMed MOs as a significant frustration, as expressed by P10 regarding the challenges of using multiple online systems to access patient records:

"The HUSM system has too many components and is very confusing. It's not easy. It's not user-friendly." (P10, MMed MO)

Compared to service MOs, the majority of whom received their undergraduate and housemanship training in this hospital, they felt familiar with the system and had no issues with it. However, addressing these issues by integrating into a single main system is deemed beneficial to facilitate MOs' workflows, as suggested by another participant:

"I think all those applications need to be integrated into one system. And all the investigations should also be included in the online system." (P11, MMed MO)

Compensation

Inadequate salary and allowances are also main reason for dissatisfaction among MOs. Most participants highlighted the disparity between workload and compensation received.

"We are paid less than what we work for... The workload keeps increasing and not decreasing, but the salary for doctors remains the same." (P6, MMed MO)

Other MOs also voiced out pay difference between government and private sectors.

"In comparison, when doing locum work outside (private clinic), you can get forty, sometimes fifty or sixty (Ringgit) in one hour. And for one day of on-call (hospital), we get two hundred (Ringgit)... the on-call allowance is still low when compared with the workload." (P19, service MO)

Career Advancement Difficulties

Five service MOs shared challenges in pursuing further studies, which are specific to those working in the university hospital. One participant noted the issue of limited slots for the Master's program:

"In my department, there is only one slot per year... For the KKM Master's programme, many can get in, but the slots for service MOs here are very limited." (P14, service MO)

However, some participants agreed that the university has made efforts to address these barriers so that more of their MOs can join the Master's programmes.

"So, like last year and the year before, only one or two people from a department were able to continue their studies. But luckily this year, they've started accepting more. Even in [Department P], there are five people this year. I am grateful to be one of those who got the slot." (P19, service MO)

Unlike service MOs, MMed MOs face unique challenges in their career development. Many experienced difficulties coping with the stress of postgraduate studies while also maintaining their regular work duties.

"Since we are postgraduate MOs, we still have to work while studying. So the responsibility to provide service is still there. But we also have to meet other academic requirements like classes, CME, research, and many other things." (P4, MMed MO)

DISCUSSIONS

This qualitative study explores job satisfaction among medical officers (MOs) in a university hospital setting, revealing several themes on MOs' perspectives of job satisfaction aligning with Herzberg's Two-Factor Theory. A significant motivator identified in this study was the satisfaction derived from patient care, including aspects of diagnosing, treating, and communicating with patients. This aligns with Herzberg's Two-Factor Theory, where achievement and recognition through meaningful patient interactions enhance their satisfaction.¹² Various international studies showed similar findings, whereby the quality of patient care and the ability to spend adequate time with patients are significant predictors of job satisfaction among physicians.²² Furthermore, effective communication by fostering patient's understanding and compliance, was essential component that reinforced job satisfaction as this was seen as a direct outcome of their dedication to patient care.²³

Achieving balanced work-life dynamics and personal fulfilment has emerged as a vital component of job satisfaction as demonstrated not only in local contexts but also on a global scale. A study conducted in India had a

similar finding, that work-life balance among doctors is significantly shaped by factors such as working hours and the time dedicated to family and personal activities.²⁴ While not directly tied to Herzberg's Two-Factor Theory, maintaining a balance between work and family life reduces conflicts and promotes greater job satisfaction.²⁵ Maintaining this balance enhances productivity and engagement, as employees are less prone to burnout and better equipped to manage professional and personal responsibilities – findings echoed in both local and studies from the West.^{26,27} On the other hand, poor work-life balance is associated with adverse effects on both physical and mental health.²⁸

Another key motivator for MOs in this setting is the opportunity to share knowledge with juniors which aligns with Herzberg's motivator factor of recognition, where acknowledgment for their efforts in mentorship fosters job satisfaction.¹² Sharing knowledge not only leads to satisfaction, but job satisfaction itself is a strong predictor of knowledge-sharing behaviour.²⁹ Availability of educational opportunities create positive experiences for doctors, and this is not only significant for those pursuing Master degrees like the MMed MOs, but also to service MOs who are planning to pursue their studies in the university hospitals. These findings resonate with another study conducted among interns in Australia that showed quality supervision, teaching and clinical exposure in the hospital contributes to their satisfaction.³⁰

Working environment including interpersonal relationship and working conditions are typically viewed as hygiene factor preventing dissatisfaction, however, in this study it was also seen as a satisfier.¹² Cohesive teamwork between team members and supportive hospital facilities is crucial for reducing work-related stress and burnout, particularly in a high-demand profession like medicine.³¹ Despite this, negative impact contributed by non-user friendly of hospital electronic system can hinder job satisfaction, a challenge similarly observed in other developing countries like India.³² This dual role of working environment highlights the complexity of Herzberg's Two-Factor Theory in a university hospital setting, where factors traditionally seen as preventing dissatisfaction also actively

contribute to job satisfaction.

In the Malaysian medical community, concerns about the competency of house officers are not new as many have raised issues regarding the quality of these young doctors.³³ This concern also extends to university hospital, where the inadequate role of house officers, coupled with their unsatisfactory performance, has been a source of dissatisfaction for MOs. In Malaysia, studies on clinical competency have primarily focused on medical students, revealing low perceived competency in performing clinical procedures.^{34,35} In contrast, overseas research has extended to junior doctors, highlighting significant concerns regarding inadequate competency, particularly in basic procedures.³⁶ Although there are no studies directly correlating MOs' job satisfaction with the incompetency of house officers, a satisfying interprofessional relationship at work can prevent dissatisfaction, highlighting the importance of interpersonal relationships as hygiene factor.³⁷

Salary is a prominent dissatisfying factor identified in this study, aligning with Herzberg's hygiene factors.¹² This is consistent with existing local and international studies showing salary and benefits are critical factors influencing job satisfaction, particularly when the compensation does not meet employees' expectations.^{31,38,39} The comparison between government and private sector's compensation further exacerbates dissatisfaction.⁴⁰ This dissatisfaction can lead to increased turnover rates of MOs, particularly those aspiring specialists, may look for better-paying opportunities elsewhere and contribute to higher rate of resignations from government service.^{41,42} However with the recent salary revision in Malaysia and on-call allowances increment announced by the government it is hoped to alleviate financial stress and improve the overall well-being and performance of medical officers.⁴³

Opportunities for career development is seen as a dissatisfier among MOs in contrast to Herzberg's theory.¹² Limited slots and perceived inequities in educational opportunities can contribute to frustration and hinder personal and professional development.⁴⁴ These findings align with a local studies noting the need to address governance issues and resource limitations in medical

specialty training in Malaysia in comparison to a more structured post-graduate training in oversea countries.^{45,46} Additionally, academic challenges and the need to balance clinical duties with academic responsibilities play significant role in satisfaction among post-graduate trainees. The demanding nature of their work, combined with the pressures of post-graduate medical training, can create a stressful working environment for these trainees^{47,48} Therefore, providing adequate educational opportunities for service MOs and implementing welfare interventions to enhance coping skills for MMed MOs are both essential for ensuring job satisfaction across these groups.^{49,50}

CONCLUSION

Despite differing career roles and goals, job satisfaction among both service and MMed MOs in the university hospital is largely similar, consistent with Herzberg's Two-Factor Theory. The dynamic interplay between motivator factors, such as personal fulfilment, patient care, and teamwork, and hygiene factors, including salary, career development, and systemic support, highlights their critical role in shaping job satisfaction among medical officers. The findings of this study are consistent with both local and global research, underscoring the universal importance of addressing dissatisfaction stemming from hygiene factors while enhancing motivators to foster a more balanced and fulfilling work environment.

To address these findings, hospital management should prioritize improving the usability of patient record systems, improve allowances policies, and expanding postgraduate training opportunities. Policymakers must consider aligning financial incentives with the workload and revising career development pathways to retain skilled medical professionals. Such measures will not only boost job satisfaction but also improve healthcare delivery and the training of future health professionals. By focusing on these targeted strategies, stakeholders can foster a more supportive environment, ultimately benefiting patient outcomes and the quality of medical education.

REFERENCES

1. Sani R. Unique role of university teaching hospitals. [Internet]. NST. 2018 [cited 2024 Sep 10]. Available from: <https://www.nst.com.my/education/2018/12/437352/unique-role-of-university-teaching-hospitals>
2. Ayanian J, Weissman J. Teaching hospitals and quality of care: A review of the literature. *Milbank Q.* 2002;3(80):569–93.
3. Huda B, Rusli B, Naing L, et al. A study on job strain and dissatisfaction among lecturers in the School of Medical Sciences Universiti Sains Malaysia. *Southeast Asian J Trop Med Public Health.* 2004;35:210–8.
4. Kinman G. Pressure Points: A review of research on stressors and strains in UK academics. *Educ Psychol (Lond).* 2001;21(4).
5. Chichra A, Abhijnhan A, Tharyan P. Job stress and satisfaction in faculty of a teaching hospital in South India: A cross-sectional survey. *J Postgrad Med.* 2019;65(4):201–6.
6. Kapur N, Borrill C, Stride C. Psychological morbidity and job satisfaction in hospital consultants and junior house officers: Multicentre, cross sectional survey. *BMJ [Internet].* 1998;317:511–2. Available from: www.bmj.com
7. Azmi II, Ahmad N, Aziz NA, et al. Governing the teaching hospitals in Malaysia: Legal issues and challenges. *Bioethics.* 2021 Dec 20;28(2):26–32.
8. Sa HC, Nhiem NTT, Anh BTM, et al. Job satisfaction of health workers at a Vietnamese University Hospital and its predicted factors: A cross-sectional study. *Health Sci Rep.* 2024 Apr 1;7(4).
9. Locke EA. The nature and causes of job satisfaction. In: *Handbook of Industrial and Organizational Psychology.* Chicago: Rand McNally; 1976. p. 1297–343.
10. Vroom V H. Job satisfaction. Vroom VH, editor. New York: John Wiley and Sons; 1964. p 99.
11. Armstrong M. *A Handbook of Human Resource Management Practice.* London: KoganPagePublishing; 2006.
12. Herzberg F, Mausner B, Synderman BB. *The motivation to work.* New York, USA: John Wiley; 1959.

13. Newstorm J. *Organizational Behaviour: Human Behaviour at Work* (12th ed.). McGraw-HillIrwin; 2017.
14. Janicijevic I, Seke K, Djokovic A, et al. Healthcare workers satisfaction and patient satisfaction-where is the linkage? *Hippokratia*. 2013;17(2):157–62.
15. Xue J, Wang H, Chen M, et al. Signifying the relationship between psychological factors and turnover intension: The mediating role of work-related stress and moderating role of job satisfaction. *Front Psychol*. 2022;13.
16. Kaplan D. Determinants of job satisfaction and turnover among physicians. [Internet]. San Jose State University; 2009. Available from: https://scholarworks.sjsu.edu/etd_theses/3971
17. Karimi L, Leggat SG, Bartram T, et al. Emotional intelligence: predictor of employees' wellbeing, quality of patient care, and psychological empowerment. *BMC Psychol*. 2021;9(1).
18. Ramlan M, Rugayah MA, Zafuan Z. Job satisfaction at workplace: a case of doctors in government hospital, Kuala Lumpur, Malaysia. *Adm Sci*. 2014;11.
19. Ab Rahman N, Husin M, Dahian K, et al. Job satisfaction of public and private primary care physicians in Malaysia: analysis of findings from QUALICO-PC. *Hum Resour Health*. 2019;17(1).
20. Azmi MI, Daud A, Shafei MN, et al. Job Dissatisfaction and Its Predictors among Healthcare Workers of 'Type 2 Health Clinics' in North-Eastern Malaysia. *Int J Environ Res Public Health*. 2022;19(23).
21. Braun V, Clarke V. Using thematic analysis in psychology. *Qual Res Psychol*. 2006;3(2):77–101.
22. Scheurer D, McKean S, Miller J, et al. Physician Satisfaction: A systemic Review. *J Hosp Med*. 2009 Nov;4(9):560–8.
23. Deniz S, Akbolat M, Çimen M, et al. The Mediating Role of Shared Decision-Making in the Effect of the Patient–Physician Relationship on Compliance With Treatment. *J Patient Exp*. 2021;8.
24. Priyadharshini R, Divya D. A study on work life balance of doctors in impact of key variables. *Journal of Fundamental & Comparative Research*. 2022;8.
25. Namayandeh H, Juhari R, Yaacob SN. The effect of job satisfaction and family satisfaction on work-family conflict (W-FC) and family-work conflict (F-WC) among married female nurses in Shiraz-Iran. *Asian Soc Sci*. 2011;7(2):88–94.
26. Shanafelt TD, Boone S, Tan L, et al. Burnout and Satisfaction With Work-Life Balance Among US Physicians Relative to the General US Population. *Arch Intern Med*. 2012;172(18):1377–85.
27. Al-Dubai SAR, Ganasegeran K, Perianayagam W, et al. Emotional burnout, perceived sources of job stress, professional fulfillment, and engagement among medical residents in Malaysia. *The Scientific World Journal*. 2013;2013.
28. Borowiec AA, Drygas W. Work–life balance and mental and physical health among Warsaw specialists, managers and entrepreneurs. *Int J Environ Res Public Health*. 2023;20(1).
29. Zia-Ur-Rehman M, Rafique MA, Ali A, et al. Factors Affecting Knowledge Sharing Among Doctors of Public Hospitals. *NICE Research Journal* [Internet]. 2017 Dec;10:218–33. Available from: <https://www.researchgate.net/publication/324007582>
30. Isaacs A, Raymond A, Jacob A, et al. Job satisfaction of medical interns: a qualitative study using Herzberg's hygiene motivation theory. *Res Sq*. 2020;
31. Shi X, Xiong D, Zhang X, Han M, Liu L, Wang J. Analysis of factors influencing the job satisfaction of medical staff in tertiary public hospitals, China: A cross-sectional study. *Front Psychol*. 2023;14.
32. Bajwa NK, Singh H, De KK. Impact of EHR technology implementation on physicians' job satisfaction. *International Journal of Applied Management and Technology*. 2019;18(1).
33. Chee Han L, Analyst S, Han C. Housemanship programme in Malaysia: Availability of positions and quality of training. 2017.
34. Salam A, Zainuddin Z, Latiff A, et al. Assessment of medical graduates competencies. *Ann Acad Med Singap*. 2008;37(9):814–6.
35. Lai N, Sivalingam J, Ramesh J. Medical students in their final six months of training: progress in self-perceived clinical competence, and relationship between experience and confidence in practical skills.

- Singapore Med J. 2007;48(11):1018–27.
36. Evans D, Wood D, Roberts C. The effect of an extended hospital induction on perceived confidence and assessed clinical skills of newly qualified pre-registration house officers. *Med Educ.* 2004;38(9):998–1001.
 37. Holmberg C, Caro J, Sobis I. Job satisfaction among Swedish mental health nursing personnel: revisiting the two-factor theory. *Int J of Ment Health Nurs.* 2018;27(2):581–92.
 38. Daud F, Farah N, Ghani A, et al. Job satisfaction among specialist in Ministry of Health Malaysia and its associated factors. *Malaysian Journal of Public Health Medicine.* 2022;22(3):1–8.
 39. Almansour H. Factors Influencing Job Satisfaction among Recently Qualified Resident Doctors: A Qualitative Study. *Asia Pacific Journal of Health Management.* 2021;16(4).
 40. Aidalina M, Aniza I. Factors associated with the brain-drain phenomenon of doctors from the public sector to the private sector in Selangor and Kuala Lumpur. Vol. 2, *Int J Public Health Cli Sci.* 2015.
 41. Nur M, Ar A, Wp SE. Physician's intention to leave from malaysia government hospitals with existing retention strategy. [Internet]. Vol. 4, *J Public Health Policy Plann.* 2020. Available from: <https://www.alliedacademies.org/public-health-policy-planning/>
 42. Bajpai J. Employee Satisfaction and the Role of Motivation: A Study of a Super-specialty Hospital. *International Journal of Research Foundation of Hospital and Healthcare Administration.* 2015;3(2):65–8.
 43. Iskandar I. 2025 Budget: RM55 to RM65 increase in on-call allowances. [Internet]. *New Straits Times.* 2024. Available from: <https://www.nst.com.my/news/nation/2024/10/1122043/2025-budget-rm55-rm65-increase-call-allowance>
 44. Atefi N, Abdullah KL, Wong LP. Job satisfaction of Malaysian registered nurses: A qualitative study. *Nurs Crit Care.* 2016;21(1):8–17.
 45. Hazilah N, Manaf A. Medical specialist training: Views from stakeholders. *IIUM Medical Journal Malaysia* [Internet]. 2015;14(1):65–70. Available from: <https://www.researchgate.net/publication/283743885>
 46. Abdul Rani M. Medical education in Malaysia. *IIUM Medical Journal Malaysia.* 2012;11(2). [Internet]. Available from: <https://journals.iium.edu.my/kom/index.php/imjm/article/view/520/303>
 47. Ahmed A, Bustam A, Yousif S. Work-related stress among emergency medicine postgraduate students in two academic centers in Malaysia. *International Journal of Medicine in Developing Countries.* 2020;941–6.
 48. Sadiq MS, Mahjabin Morshed N, Rahman W, et al. Depression, Anxiety, Stress among Postgraduate Medical Residents: A Cross Sectional Observation in Bangladesh. *Iran J Psychiatry.* 2019;192–7.
 49. Raj KS. Well-being in residency: A systematic review. *J Grad Med Educ.* 2016;8(5):674–84.
 50. Chaudhury S, Banerjee A. Correlates of job satisfaction in medical officers. *Med J Armed Forces India.* 2004;60(4):329–32.