Job satisfaction of medical interns: a qualitative study using Herzberg’s hygiene motivation theory

CURRENT STATUS: UNDER REVIEW

Anton Isaacs  anton.isaacs@monash.edu
Monash University
Corresponding Author
ORCID: 0000-0002-1804-5130

Anita Raymond
Latrobe Regional Hospital

Angela Jacob
Latrobe Regional Hospital

Philippa Hawkings
Latrobe Regional Hospital

DOI:
10.21203/rs.2.24202/v1

SUBJECT AREAS
Health Policy

KEYWORDS
Internship and residency, job satisfaction, Herzberg, motivation-hygiene theory, mental health, social support, psychosocial support systems, organisation and administration, Hospitals, Teaching
Abstract

Background: Human resource management policies and practices are not well understood and implemented in some health care settings. Besides affecting client outcomes, poor management practices can adversely affect the health and wellbeing of healthcare professionals such as nurses and doctors. The junior most doctors in the medical hierarchy of a hospital are interns. Owing to long working hours and heavy workloads, internship can be quite a stressful experience resulting in unprofessional and unethical behaviours as well as increased number of medical errors. Although there is an abundance of research on the difficulties faced by interns, there is a paucity of research highlighting their job satisfaction. Identifying factors that influence interns’ job satisfaction could inform better working conditions for interns as well as improve client outcomes and overall hospital performance.

Methods: Job satisfaction was explored by one-to-one semi-structured interviews with 12 senior interns within the theoretical framework of Herzberg’s ‘hygiene-motivation’ or ‘two factor theory’. Data were analysed thematically.

Results: Reasons for job satisfaction included feeling supported in the work place as well as getting quality supervision, teaching and clinical exposure. Reasons for job dissatisfaction included poor access to administration, unduly stressful working situations, lack of support for mental health and wellbeing and poorly organised teaching sessions. The results of this study closely align with Herzberg’s motivation hygiene theory showing that reasons for job satisfaction are mostly different from reasons for job dissatisfaction.

Conclusion: The internship experience, together with the people they are influenced by, can determine a doctor’s future career pathway. It is therefore vital for internship coordinators and hospital managers to facilitate a positive internship experience. The findings have implications for human resource management policy and practice in
hospitals.

Background

Human resource management (HRM) policies and practices have been known to be linked to the performance of healthcare organisations for some time [1]. However, they are not well understood and implemented in some healthcare settings [2, 3]. Besides affecting client outcomes, poor HRM practices can adversely affect the health and wellbeing of healthcare professionals such as nurses and doctors. There are reports of poor management practices resulting in decreased job satisfaction [2], emotional exhaustion resulting in low motivation and turnover intentions [4], as well as psychological distress and depression [5]. Nurses, allied health workers and junior doctors appear to be most affected [3].

The junior most doctors in the medical hierarchy of a hospital are interns. Internship, also referred to as prevocational training is a one year mandatory apprenticeship that medical students need to undertake in order to successfully complete their degree, [6]. Whilst medical students who have completed their five years of medical studies have preferences for hospitals to undertake their internship, hospitals also need interns on whom they depend on for much of the basic clinical work. However, research suggests that hospitals do not often invest in junior doctors [3].

Internship is the first year of transition for junior doctors from student to doctor. This transition has been described as a big cultural leap [7, 8] and can be quite a stressful experience [9]. Stressors experienced by junior doctors include long working hours and heavy workloads [10], managing one’s newly gained responsibility particularly during uncertain situations, encountering death, feeling unsupported [9], role ambiguity and conflict as well as work relationships [11, 12].

Interns have reported emotional exhaustion, cynicism, low professional effectiveness and
burnout [13] as well as sleep deprivation, emotional distress [14] and depression [15]. The consequences of stress can result in unprofessional and unethical behaviours, [16] increased number of medical errors [17] and can adversely affect young physicians’ empathy and attitudes towards their patients [14, 18]. Despite the stress they are under, interns are not expected to talk about it but rather present themselves as being professional and competent at all times [19].

Although there is an abundance of research on the difficulties faced by interns, there is a paucity of research highlighting job satisfaction of interns. Identifying aspects of internship that influence interns’ job satisfaction could help hospital managements understand what changes to make in working conditions for interns. After all, interns are at the coalface of patient care in hospitals and a happy intern can contribute to a happy patient. On the contrary, poor wellbeing among healthcare professionals has shown to adversely impact patient safety [20].

Theoretical Framework

Fredrick Herzberg’s ‘hygiene-motivation’ or ‘two factor theory’ published in 1959 is a popular, albeit sometimes controversial theory has been used to explore job satisfaction [21]. According to Herzberg, factors affecting job satisfaction can be divided into two categories – hygiene factors and motivation factors. Hygiene factors are related to working conditions, interpersonal relations, supervision, company policy and administration, salary, and job security. Motivation factors relate to achievement, recognition, responsibility, and advancement and align with the self-actualisation needs of Abraham Maslow [22].

Herzberg borrowed the term hygiene from epidemiology where good hygiene prevents disease but does not make people healthy. Similarly, when hygiene factors are met, people will not be dissatisfied [23]. However, in order to increase satisfaction, motivation
factors must be met [21, 24]. Therefore, according to Herzberg, there are two types of satisfaction: satisfaction with motivating factors and satisfaction with hygiene factors, both of which operate on a different continuum. There are also two types of dissatisfaction – dissatisfaction with motivating factors and dissatisfaction with hygiene factors which again operated on different continuums [23].

Herzberg’s research showed no association between job satisfaction and mental health. Nonetheless, it is now known that very high levels of job dissatisfaction can cause distress, and affect one’s health [25]. Herzberg also discussed the importance of job enrichment in order to increase job satisfaction [26]. However, this is relevant only when job monotony is the problem [26]. This study had two objectives. 1. To ascertain the aspects of internship that interns were happy with and those that they were unhappy with. 2. To assess if the results from this study held true to Herzberg’s hygiene motivation theory.

Method

Study design

Using a qualitative methodology one-to-one interviews were conducted with interns.

Setting

The study was located in a region approximately 92-143kms from a major Australian capital city and is classified as a District of Workforce Shortage (DWS) for GPs [27]. The Rural Intern Training program was established as part of an endeavour to attract doctors to work in the region. It was set up as a partnership between three regional hospitals and an independent rural GP training company and employs up to 25 interns a year through Intern Match coordinated through the Post Graduate Medical Council of Victoria. During the program, interns spend 12 months moving through 5 of 10 possible rotations spread
over the three hospitals and general practice in the region. The program commences with a three-day orientation consisting of practical skills, simulation, and education sessions, which provide an opportunity for new interns to ‘shadow’ a current intern and help support transition to practice [28, 29]. The program is aimed at maintaining safety and governance in prevocational training for interns. There is also a weekly protected teaching time throughout the training year.

Recruitment of participants

The medical education officer [recruiter] at the coordinating hospital emailed the explanatory statement and consent form to 14 interns who were coming to the end of their medical internship training during 2017 & 2018. The recruiter who is not part of the research team, also promoted the research during weekly education sessions. Those who were interested in participating in the research returned duly signed informed consent forms to the lead researcher who then contacted those interns to set up a time for an interview. The lead researcher was in no way connected to the internship program or employed by the hospital and hence did not pose any ethical issues relating to recruitment.

Data collection

Semi-structured interviews [30] were conducted by the lead researcher via telephone except for one which was held face-to-face in a private office space that was approved by the participant. The interview commenced with two questions:

1. Which aspects of your internship were you happy with and why?
2. Which aspects of your internship do you think needed improvement and why?

Following these questions, participants were specifically asked about their positive and negative experiences of four aspects of the internship experience: Role autonomy,
Teaching, Social support and Mental Health & Wellbeing. These aspects are the focus of routinely conducted intern surveys facilitated by the Prevocational Medical Council of Victoria. All interviews lasted about 45 minutes and were digitally recorded and professionally transcribed.

Data analysis

Data from transcripts were analysed thematically [31]. After reading each transcript, chunks of data were inductively assigned codes [32]. Once all data were coded, the researchers stepped back from the data to look for similarities and connections between codes. Codes that were aligned to a similar topic were separated into groups. These groups, which were further refined by modifying or combining them developed into the basic construct of a theme [31]. Researchers worked together to review data within each code to ensure that the content and meaning represented each theme accurately. At each step of data analysis and after discussion, codes and themes were finalised. Hospital and rotation names have been removed to ensure confidentiality. Once thematic analysis was complete, attempts were made to align themes related to positive and negative experiences with Herzberg’s hygiene and motivation factors.

Results

A total of 12 interns participated in this research project of who 7 were female. All were aged over 20 with one intern aged over 30 years. Two interns were from another country and one was from interstate. While one intern was a local resident, eight were resident over 100 kms from the region. Demographic characteristics are given in Table 1. On the topic of positive experiences of internship, four themes emerged from the data. They were: Supportive work environment, quality supervision, good teaching and advantages of rural internship. See Table 2 for themes, codes and representative quotes on positive
experiences. Four themes also emerged from the data on negative experiences of internship. They were: Poor access to administration, unduly stressful working conditions, lack of support for mental health and wellbeing and poorly organized teaching sessions.

See Table 3 for themes, codes and representative quotes on negative experiences.

Table 1
Demographic characteristics of rural interns 2018 (N = 12)

| Age       |       |       |
|-----------|-------|-------|
| 20–25     | 5     |       |
| 26–30     | 6     |       |
| 30+       | 1     |       |
| Sex       |       |       |
| Males     | 5     |       |
| Females   | 7     |       |
| Approximate distance of residence from most commonly attended hospital |       |       |
| 55 km     | 1     |       |
| 103 kms   | 1     |       |
| 164 kms   | 7     |       |
| Interstate| 1     |       |
| International | 2 |       |

Number of Rotations per hospital

| Health Service 1 |       |
|------------------|-------|
| General Medicine | 5     |
| Emergency        | 12    |
| Speciality Medical consults | 2 |
| Psychiatry       | 4     |
| Orthopaedics     | 7     |
| Anaesthetics     | 4     |
| Geriatrics       | 1     |
| Oncology         | 1     |

| Health Service 2 |       |
|------------------|-------|
| General medicine | 5     |
| General surgery  | 1     |

| Health Service 3 |       |
|------------------|-------|
| General medicine | 4     |
| General surgery  | 4     |
| Emergency        | 3     |

| General Practice Clinic |       |
|-------------------------|-------|
|                         | 3     |

Table 2
Themes, codes and representative quotes for positive experiences of Internship

| Theme                        | Code                          | Representative quote                                                                 |
|------------------------------|-------------------------------|---------------------------------------------------------------------------------------|
| Supportive work environment  | Good induction process        | When you come in, they give you a really extensive orientation. So you don’t feel like you’re thrown in the deep end. You’re very slowly brought into the work that is required. \[2F\] |
| Supportive staff             |                               | In [Hospital] you meet the administration ladies who do the rostering and pay as part of your orientation and you’re shown where their office is, and it’s all very welcoming and you can talk to them any time, and then throughout my time there, they were very helpful. You could always go and talk to them if you had a question about the roster, or you needed something changed, or with overtime queries and things like that. [6M] |
| Supportive team              |                               | Working there was also good because the team was really supportive. The consultant is supportive of the interns, also the registrar…[8F] |
| Good working environment     |                               | It was the nicest environment, the supervisors were the most supportive … [10F] |
| Good work culture            |                               | They lacked resources ... but they have a really good work culture which I through
Junior doctors are treated well | [Hospital] probably had the best staff in terms of treating junior doctors. I think they care about junior doctors there more than the other hospitals. So I quite enjoyed that. [2F]

Feeling safe | There was no time actually during my first rotation that I felt unsafe which is a very big thing for me. [2F]

Did not feel alone | We never felt alone that we had to make decisions on our own. [9F]

Quality supervision | Ample supervision: Emergency Department really stood out for me because we had a lot of supervision. The consultants were very clear; they explained why they made those decisions; there was time to talk to the consultants, you know... about our concerns. [9F]

Caring supervisors | My supervisor, the consultant, was actually a really good and caring teacher who’s very keen on trying to get us to learn about the conditions that we see... and the medical registrars especially, have been absolutely lovely... [7F]

Freedom to ask questions | I was able to go there and ask my registrar or all the different consultants and ask them questions, and they were more than happy to teach me, and I felt I learnt the most there... [4M] I was very comfortable to ask questions. And as my first internship rotation, it was the best way to start internship for a medical student, because I could ask any question that I needed to. [5F]

Supervised learning | At the start... I worked directly under a consultant; they did spoon-feed me and they showed me how to do things, and were very much involved in my education, and then towards the end of the rotation- week nine, all the [consultants] kind of took a step...
back and it was like, “we’ll let you run the [care and procedures], and if we’re concerned we’ll step in”, but they’re happy to watch me do everything and I would explain to them what I’m doing and that sort of thing; so I felt that was really good.

[4M]

[Rotation] was interesting for me because it was the first time that I was largely responsible for a patient, so I’d take the history, I’d do the examination, investigate myself and then come up with a management plan and then talk to the bosses about it..., you feel like there’s a bit more autonomy there and there’s a lot more ... thinking involved because you’re doing it yourself, kind of thing. [7F]

| Good teaching | Prioritised teaching |
|---------------|----------------------|
| I wanted to clarify that ... at [hospital], they highly prioritised intern teaching. They made sure that every intern could attend by rostering us all on the Tuesday, and even at times when I was stuck in ED with a patient, the Medical Education Officer personally called the supervising consultant to ask for someone to cover my patients so that I could attend teaching. [5F] |

[Hospital] had a good teaching program and I think what made it do so well was that it was really enforced that you went to teaching. I was there 30 weeks and I probably missed three or four weeks and I was either scrubbed in theatre, or it was a session that I’d already seen and I thought I’d be better off on the floor. [3M] |

Regular after-hours informal teaching

[Rotation], I thought was good because
The consultant did weekly teaching; actually twice weekly teaching; So, after work hours, he would do a non-formal tutorial with the registrar and the intern, and I thought that was good...[8F]

**Dedicated departmental teaching for junior doctors**

At [Rotation] we have dedicated intense teaching, or dedicated junior medical officer training every week for about an hour or two hours, and sometimes in anaesthetics the whole surgical department had simulations every week, like, this patient’s deteriorated, how do you manage it... [4M]

They have the once a week teaching that goes for about an hour, and it’s generally pretty well organised. They try to get someone to take it each week on a different topic and encourage the interns to attend. [6M]

**Teaching on rounds**

So on [rotation] there’s quite a lot of informal teaching, obviously, because on rounds you always have your seniors there, and, depending on the different person, they will just spontaneously teach you, or sit down in a break or something and you can ask questions and it’s very easy. [6M]

**Effective teaching**

I think the teaching that we get at [Hospital] is even more relevant perhaps, even though it’s not as detailed, I think the way it is [here] it’s one on one and I think that’s much more effective. [2F]

**Advantages of rural internship**

Lots of interesting cases

I think [this] internship program is actually really, really good. It’s a nice, sizable regional hospital. It has lots of interesting cases coming through...
Sure the specialties are a bit religious, but there’s certainly enough to keep you interested. So in terms of building experience and trying to wet your feet in this career, I think [this] is certainly a pretty good start. [7F]

More widely focused GPs

Generally practitioners tend to be a little bit more widely focussed in terms of the variety and type of patients that they see and the conditions that they care for, and perhaps a little bit less likely to refer early to a specialist. So, yeah... [11M]

| Theme                                      | Code                               | Representative quote                                                                                                                                                                                                 |
|--------------------------------------------|------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Poor access to administration              | Difficulty accessing administrative personnel | It’s a lot more difficult to access HR people or medical workforce people to talk to about any issues that you’re having, or for example rostering or pay; you often don’t really know who you’re supposed to ask for things... and eventually figure out who’s the right person to ask, and then it takes even longer, and it’s all much more difficult, really, it’s a bit less personable, which makes it more difficult. [6M] |
| Unduly stressful work situations           | Feeling overwhelmed with work       | I started on night shift and the first night there was no senior doctor and the most senior person in the department was PGY2, [Postgraduate year 2]. [10F] On my first day I saw four bays and I saw four CAT 2 s. They were all in there at the same time and they came within an hour and a half, all four CAT 2 s on my first day of being in ED and then I got asked why I was so slow. You know! I think that’s unreasonable to put that on an intern on their first day... you feel very much alone, like not well supported. [2F] |
| Lack of support for mental health and wellbeing | Feeling unsupported                 | I think there is a lack of social support but, you know, at the same time I’m not quite sure what it is that you could do or what you’re meant to do. It’s hard isn’t it? I’ve had conversations with people about “Do you think I should start antidepressants?” You know, to be honest I really have had those conversations with [other interns]. So I’m not sure there is good social support. [2F] |
| When the supervisor is the cause of stress | As a doctor, when your supervisor for that rotation and the person's assessing you for that rotation is also the person that’s causing |                                                                                                                                                                                                                      |
also the person that’s causing
some of the issues. So you’re in a
no-win situation and you’ve got to
be really careful how you play
your cards, don’t you? I’m not
sure Medical Workforce would be
particularly helpful in that
regard... I guess there are
avenues to go to but there’s kind
of, you know, you can go to this
person and you can go to this
person, and they don’t necessarily
have any power to change
anything. [11M]

No one to look out for us

Yeah, there’s been times that I’ve
been very stressed and upset, but
not sure who to go to. But I have
confided in my co-intern. I think
that’s one thing that internship
really lacks is really someone who
is there to look out for us interns.
[5F]

Poorly organized teaching
sessions

Irrelevant teaching

I think in [rotation] the teaching is
not really geared towards junior
doctors, yeah. You have weekly
teaching sessions but they’re
more esoteric ... which may not
be relevant for a junior doctor.
[7F]

No time to attend teaching
sessions

On [Rotation] I think I might have
gone three times out of the ten
weeks potentially, because you
just don’t have any spare time...
On Wednesdays, when there’s
teaching, you’re supposed to get
cover to attend, but you don’t. So
if you’re not rostered to work,
then you obviously don’t go, and

if you are rostered to work you
don’t get the time off. [10F]

Unreliable teaching sessions

Last-minute cancellations, no-
shows at times. Like, maybe when
I was there for 10 weeks, there
were no shows twice and then
cancellations three times, and the
rest were like, part of them was
useful, part of them was just
irrelevant, some things that we
already knew about and other
things that were not important to
our jobs. [9F]

Positive experiences of internship

Supportive work environment

A comprehensive orientation at the start as well as a friendly and welcoming attitude of
administrative staff made interns feel supported. They stated that a good work culture
more than made up for the lack of resources in a health service and that supportive
colleagues such as consultants and registrars who treated junior doctors well were key to
maintaining a supportive workplace. In addition, interns also felt that it was important to
feel safe and not have to make difficult decisions on their own.
Quality supervision

This theme encompasses some of the aspects of good supervision. In more procedure-driven rotations, interns describe how they moved from being initially hand-held to doing on their own, under supervision. In other rotations, where the focus was on arriving at a diagnosis and planning treatment, they were able to discuss their findings and management plan with a supervisor before proceeding to treatment. The freedom to discuss their work with and ask questions to registrars and consultants was greatly valued by interns, particularly during their first rotations.

Good teaching

In this theme, interns speak about their experience of good teaching received during their internship. Regular hours dedicated to formal teaching of junior doctors that was conducted in some rotations was acknowledged by interns. Informal teaching such as those conducted on rounds or afterwards was also valued. Interns indicated that relevant teaching that was conducted one on one was more effective, even if it was not detailed.

Advantages of rural internship

This theme pertains to factors that make a rural internship more useful from that in the city. Interns suggested that there was generally better clinical exposure in a rural setting. They also indicated that rural general practitioners tended to manage a wider variety of clinical conditions.

Negative experiences of internship

Poor access to administration

This theme relates to the difficulties faced by interns in finding the right people to approach for their administrative issues.

Unduly stressful work situations
Interns described their experiences of stressful situations. A major cause of concern for interns was when they were alone with serious patients and no senior doctor was available to ask for guidance. Situations such as these made them feel alone and unsupported.

**Lack of support for mental health and wellbeing**

Interns described a general dearth of available formal support systems for those experiencing a crisis although the participating hospital services did provide written resources for support. Participants also noted that when the cause of their stress was their supervisor, it was very difficult to get appropriate help. Peers were considered an important group from whom interns obtained support when they were in a crisis.

**Poorly organized teaching sessions**

Hospitals generally organise regular teaching sessions for junior doctors. However, sometimes, these sessions were poorly organised making it either irrelevant or difficult for interns to attend.

| Table 4                                                                 |
|------------------------------------------------------------------------|
| Comparison of themes from interviews and Herzberg’s hygiene and motivator factors. |
| **Hygiene factors (Dissatisfier) (-)**                                 |
| Working conditions                                                     |
| Interpersonal relations                                                |
| Supervision                                                           |
| Administrative policies                                               |
| Salary                                                                |
| **Motivator factors (Satisfier) (+)**                                  |
| Work Itself                                                           |
| Responsibility                                                        |
| Recognition                                                           |
| Achievement                                                           |
| Advancement                                                           |

| Themes from interviews                                                |
|------------------------------------------------------------------------|
| Unduly stressful working conditions (-)                              |
| Poor access to administration (-)                                    |
| Lack of support for mental health and wellbeing (-)                  |
| Supportive work environment (+)                                       |
| Quality supervision (+)                                              |
| Good teaching (+)                                                    |
| Advantages of rural internship (+)                                   |
| Poorly organized teaching sessions (-)                               |

Three themes related to negative experiences of internship aligned closely with hygiene factors. They were unduly stressful working conditions, poor access to administration and lack of support for mental health and wellbeing. One theme (Supportive work environment) related to positive experiences was also aligned with hygiene factors. Three themes, namely quality supervision, good teaching, and advantages of rural internship from positive experiences were closely aligned with motivator factors although one theme
from negative experiences (Poorly organized teaching sessions) was also aligned with motivator factors. Hence three out of four themes from the results of this study held true for Herzberg’s theory.

Discussion

This study explored the positive and negative experiences of interns. This is important for those involved in delivering training for junior doctors [33]. Having senior doctors and other work colleagues who treat them well was considered imperative for a supportive workplace. Previous studies have also shown that when they feel supported, junior doctors are likely to enjoy their work and learn more [33, 34].

Stressful situations are commonplace in medical practice and junior doctors are more than likely to encounter them [9, 10, 35, 36]. Our findings add to previous literature on the causes of stress among junior doctors such as heavy workloads and conflict in the workplace, [10, 11]. What this study adds is a general lack of support systems in the workplace resulting in interns feeling unsupported. Easily accessible support in a time of crisis and stress management strategies are not commonly available for interns in hospitals [37]. Even when support systems are in place, they are often not very useful.

It is well known that workplace bullying is consistently associated with reduced mental health [38] and bullying of junior doctors is ubiquitous in the workplace. It is also recognised that very few junior doctors report on bullying due to factors such as fear of reprisals and impact on one’s career [39-42]. However, even in the absence of bullying, the work environment can still be unsupportive. The findings of this study suggest that senior doctors need to go a step further and ensure that junior doctors are treated well – that they can feel free to ask questions. Interns are particularly vulnerable in their first rotations. However, this inexperience does not appear to be considered when they are rostered [43]. Hence a new intern who gets posted to a busy department that has little in
the form of supervision and mentoring might feel a considerable amount of stress. Interns also described the different types of quality supervision. Previous studies have indicated that good supervision determined the ability of junior doctors to recognise and respond to patient deterioration [44] and resulted in them undertaking an increased number of activities [45]. However, types of supervision vary widely and there are no clear standards for supervisors or on what is expected of those who are supervised [46]. Nonetheless, some suggest that supervision must include creating pleasant learning environments and stimulating junior doctors to learn and function independently [47]. The Australian Curriculum Framework for Junior Doctors states that interns need to be provided with effective supervision, which means supervisors being available, offering learning opportunities and supervision according to the learner’s competence and confidence as well as being a role model [48]. These aspects were highlighted by interns in this study. Hospital consultants routinely supervise registrars and junior doctors but rarely receive training in supervision [46]. Interns also described different types of good teaching. This included the regular routine teaching sessions conducted by the hospital, teaching on rounds and after hours teaching. The emphasis however, was more on teaching that was relevant even if not very detailed. A good clinical teacher is knowledgeable, competent, caring, professional, and motivating [49] and although most clinical teachers are interested in teaching, only a small fraction have actually received any teacher training [50, 51]. Our findings concur with previous studies in that those teachers who were interested in teaching junior doctors found ways to do so.

Previous studies have indicated that a rural placement is an excellent way to learn medicine, [52-54] and develop a disposition to practice in rural areas [55]. Our findings concur with previous reports [55] in that there tends to be better clinical exposure in rural
areas [54] making it a good place to start one’s career.

**Herzberg’s theory and job satisfaction of interns**

According to Herzberg, themes about satisfaction (motivating factors) are not the same as themes about dissatisfaction (hygiene factors) [23]. For instance, themes such as good teaching and advantages of rural internship which related to advancement and achievement (motivating factors) were different from themes such as unduly stressful working conditions and poor access to administration which related to working conditions and administration (hygiene factors). Except for two themes, namely supportive work environment and poorly organised teaching sessions, the results of this study held true for Herzberg’s theory. Nonetheless, it is important to note that during their internship, junior doctors are still learning their role and building their competencies. They are also learning the subtle hierarchies in the workplace. The work environment is therefore inextricably linked to learning [33] which is perhaps the essence of internship and could be considered a motivating factor.

Furthermore, although supervision is traditionally a hygiene factor, in this study it was considered a motivation factor because the role of the supervisor in internship relates more to that of a teacher. Hence the responses such as ‘being spoon-fed’, having autonomy, being able to ask questions and being taught. Although internship might not be considered a part of traditional education, it essentially teaches interns how to translate their theoretical knowledge into practice and work in a team environment. More often than not, the internship experience together with the people they are influenced by, determines a doctor’s future career pathway. It is therefore vital for internship coordinators to facilitate a positive internship experience.

Herzberg’s motivation hygiene theory is not without criticisms [23, 26]. Nonetheless, it makes a valuable contribution to human resource development by identifying factors that
impact upon employee satisfaction [26]. A limitation of this study is that the number of interns was small and the study was restricted to one region. Geography, setting and culture might play a role in determining motivating and hygiene factors. However, the findings of this study can provide a starting point for health care managers when considering ways to improve experiences of interns.

Conclusion

This is perhaps the first study to explore factors that influence job satisfaction among interns. The results of this study closely align with Herzberg’s motivation hygiene theory showing that reasons for job satisfaction are mostly different from reasons for job dissatisfaction. The findings have implications for health managers and internship coordinators.

Declarations

Ethics approval

Ethics approval was obtained from Latrobe Regional Hospital Human Research Ethics Committee (Project no: 2018-12 LNR)

Consent for publication

Written informed consent for publication was obtained from all participants.

Availability of data and materials

The datasets used and/or analysed during the current study are available from the corresponding author on reasonable request.

Competing interests

AR, AJ and PH are part of the executive of one of the hospitals where this research was conducted. AI declares no conflict of interest.

Funding

This study was partly funded by the Postgraduate Medical Council of Victoria.
Author contributions

AR conceived the idea for the study, and contributed to data analysis and writing of the manuscript. AI planned the study, undertook data collection and analysis and wrote the first draft. AJ and PH contributed to data analysis. All authors read and approved the final manuscript.

Acknowledgements

We would like to thank all the interns who, despite their busy schedule, gave time to participate in this study. We would also like to thank Jennifer Ah-Kion who helped with recruiting participants for this study. AI would like to thank HS for guidance during this project.

References

1. Bartram T, Stanton P, Leggat S, Casimir G, Fraser B: Lost in Translation: Exploring the Link Between HRM and Performance in Healthcare. Human Resource Management Journal 2007, 17:21-41.

2. O'Donnell DM, Livingston PM, Bartram T: Human resource management activities on the front line: a nursing perspective. Contemporary nurse 2012, 41:198-205.

3. Cogin JA, Ng JL, Lee I: Controlling healthcare professionals: how human resource management influences job attitudes and operational efficiency. Human Resources for Health 2016, 14:55.

4. Thanacoody PR, Newman A, Fuchs S: Affective commitment and turnover intentions among healthcare professionals: the role of emotional exhaustion and disengagement. The International Journal of Human Resource Management 2014, 25.

5. Demir D, Rodwell J, Flower R: Workplace bullying among allied health
professionals: prevalence, causes and consequences. Asia Pacific Journal of Human Resources 2013, 51, :392-405.

6. Geffen L: A brief history of medical education and training in Australia. Medical Journal of Australia 2014, 201:S19-S22.

7. Leeder SR: Preparing interns for practice in the 21st century. Medical Journal of Australia 2007, 186:S6-S8.

8. Gleason AJ, Daly JO, Blackham RE: Prevocational medical training and the Australian Curriculum Framework for Junior Doctors: a junior doctor perspective. Medical Journal of Australia 2007, 186:114-116.

9. Brennan N, Corrigan O, Allard J, Archer J, Barnes R, Bleakley A, Collett T, de Bere SR: The transition from medical student to junior doctor: today's experiences of Tomorrow's Doctors. Medical Education 2010, 44:449-458.

10. Lam TP, Wong JG, Ip MS, Lam KF, Pang SL: Psychological well-being of interns in Hong Kong: what causes them stress and what helps them. Medical Teacher 2010, 32:e120-e126.

11. Facey AD, Tallentire V, Selzer RM, Rotstein L: Understanding and reducing work-related psychological distress in interns: a systematic review. Internal Medicine Journal 2015, 45:995-1004.

12. Tallentire VR, Smith SE, Facey AD, Rotstein L: Exploring newly qualified doctors' workplace stressors: an interview study from Australia. BMJ Open 2017, 7:e015890.

13. de Abreu Santos ATR, Grosseman S, de Oliva Costa EF, de Andrade TM: Burnout syndrome among internship medical students. Medical Education 2011, 45:1146-1146.

14. Wentz DK, Ford CV: A brief history of the internship. Journal of the American
15. Baldassin S, Alves TC, de Andrade AG, Nogueira Martins LA: The characteristics of depressive symptoms in medical students during medical education and training: a cross-sectional study. *BMC Medical Education* 2008, **8**:60.

16. Dyrbye LN, Massie FS, Jr., Eacker A, Harper W, Power D, Durning SJ, Thomas MR, Moutier C, Satele D, Sloan J, Shanafelt TD: Relationship between burnout and professional conduct and attitudes among US medical students. *Journal of the American Medical Association* 2010, **304**:1173-1180.

17. Prins JT, van der Heijden FM, Hoekstra-Weebers JE, Bakker AB, van de Wiel HB, Jacobs B, Gazendam-Donofrio SM: Burnout, engagement and resident physicians' self-reported errors. *Psychology Health and Medicine* 2009, **14**:654-666.

18. Thomas MR, Dyrbye LN, Huntington JL, Lawson KL, Novotny PJ, Sloan JA, Shanafelt TD: How do distress and well-being relate to medical student empathy? A multicenter study. *Journal of General Internal Medicine* 2007, **22**:177-183.

19. Verdonk P, Rantzsch V, de Vries R, Houkes I: Show what you know and deal with stress yourself: a qualitative interview study of medical interns' perceptions of stress and gender. *BMC Medical Education* 2014, **14**:96.

20. Hall LH, Johnson J, Watt I, Tsipa A, O'Connor DB: Healthcare Staff Wellbeing, Burnout, and Patient Safety: A Systematic Review. *PLoS One* 2016, **11**:e0159015.

21. Herzberg FJ, Mausner B, Snyderman B: *The motivation to work*. 2 edn. New York: John Wiley; 1959.

22. Maslow AH: *A Theory of Human Motivation*. *Psychological Review, 50*, 370-396 1943, **50**:370-396.

23. Sachau DA: Resurrecting the Motivation-Hygiene Theory: Herzberg and the
Positive Psychology Movement. Human Resource Development Review 2007, 6:377-393.

24. Syptak JM, Marsland DW, Ulmer D: Job Satisfaction: Putting Theory Into Practice. Family practice management 1999, 6:26-30.

25. Wilkinson RG, Marmot M: Social determinants of health: the solid facts. World Health Organization; 2003.

26. Stello CM: Herzberg’s Two-Factor Theory of Job Satisfaction: An Integrative Literature Review. Department of Organizational Leadership, Policy, and Development College of Education and Human Development, University of Minnesota; 2011.

27. DoctorConnect
[http://www.doctorconnect.gov.au/internet/otd/publishing.nsf/Content/locator]

28. Sukcharoien K, Everson M, van Hamel C: A novel approach to Junior Doctor Induction: A near-peer based curriculum developed and delivered by outgoing Foundation year doctors. BMJ Quality Improvement Reports 2014, 3:u203556.w201603.

29. Ding NL, Kuwabara A: Peer teaching in Foundation Year 1. Medical Education 2012, 46:1114-1115.

30. Isaacs AN: An overview of qualitative research methodology for public health researchers. International Journal of Medicine and Public Health 2014, 4:318-323.

31. Braun V, Clarke V: Using thematic analysis in Psychology. Qualitative Research in Psychology 2006, 3:77-101.

32. Bradley EH, Curry LA, Devers KJ: Qualitative data analysis for health services research: developing taxonomy, themes, and theory. Health Services Research 2007, 42:1758-1772.
33. Kendall ML, Hesketh EA, Macpherson SG: The learning environment for junior doctor training--what hinders, what helps. Medical Teacher 2005, 27:619-624.

34. Lases LSS, Arah OA, Busch ORC, Heineman MJ, Lombarts KMJMH: Learning climate positively influences residents’ work-related well-being. Advances in Health Sciences Education 2019, 24:317-330.

35. Fred HL: These are the days. Internship revisited. Texas heart institute journal 2007, 34:3-5.

36. Willcock S, Daly M, Tennant C, Allard B: Burnout and psychiatric morbidity in new medical graduates. Medical Journal of Australia 2004, 18:357-360.

37. Koinis A, Giannou V, Drantaki V, Angelaina S, Stratou E, Saridi M: The Impact of Healthcare Workers Job Environment on Their Mental-emotional Health. Coping Strategies: The Case of a Local General Hospital. Health Psychology Research 2015, 3:1984.

38. Verkuil B, Atasayi S, Molendijk ML: Workplace Bullying and Mental Health: A Meta-Analysis on Cross-Sectional and Longitudinal Data. PloS one 2015, 10:e0135225-e0135225.

39. Scott J, Blanshard C, Child S: Workplace bullying of junior doctors: cross-sectional questionnaire survey. New Zealand Medical Journal 2008, 121:10-14.

40. Scott KM, Caldwell PH, Barnes EH, Barrett J: "Teaching by humiliation" and mistreatment of medical students in clinical rotations: a pilot study. Medical Journal of Australia 2015, 203:185e.181-185e.186.

41. Finucane P, O’Dowd T: Working and training as an intern: a national survey of Irish interns. Medical Teacher 2005, 27:107-113.

42. Watters DA, Hillis DJ: Discrimination, bullying and sexual harassment: where next for medical leadership? Medical Journal of Australia 2015, 203:175.
43. Folkestad L, Brabrand M, Hallas P: [Supervision of junior doctors and allocation of work tasks regarding admissions and further treatment of acute admitted patients]. *Ugeskrift for laeger* 2010, **172**:1662-1666.

44. Callaghan A, Kinsman L, Cooper S, Radomski N: The factors that influence junior doctors' capacity to recognise, respond and manage patient deterioration in an acute ward setting: An integrative review. *Australian Critical Care* 2017, **30**:197-209.

45. Celebi N, Tsouraki R, Engel C, Holderried F, Riessen R, Weyrich P: Does doctors' workload impact supervision and ward activities of final-year students? A prospective study. *BMC Medical Education* 2012, **12**:24.

46. Hore CT, Lancashire W, Fassett RG: Clinical supervision by consultants in teaching hospitals. *Medical Journal of Australia* 2009, **191**:220-222.

47. Busari JO, Weggelaar NM, Knottnerus AC, Greidanus P-M, Scherpbier AJJA: How medical residents perceive the quality of supervision provided by attending doctors in the clinical setting. *Medical Education* 2005, **39**:696-703.

48. Australian curriculum framework for junior doctors

[http://www.cpmec.org.au/files/Brochure%20final.pdf]

49. Lake FR, Hamdorf JM: Teaching on the run tips 5: teaching a skill. *Medical Journal of Australia* 2004, **181**:327-328.

50. Gibson DR, Campbell RM: Promoting effective teaching and learning: hospital consultants identify their needs. *Medical Education* 2000, **34**:126-130.

51. Busari JO, Prince KJ, Scherpbier AJ, Van Der Vleuten CP, Essed GG: How residents perceive their teaching role in the clinical setting: a qualitative study. *Medical Teacher* 2002, **24**:57-61.

52. Birden H, Barker J, Wilson I: Effectiveness of a rural longitudinal integrated
clerkship in preparing medical students for internship. *Medical Teacher* 2016, **38**:946-956.

53. **Review of Medical Intern training. Final report**

[http://www.coaghealthcouncil.gov.au/portals/0/review%20of%20medical%20intern%20training%20final%20report.pdf](http://www.coaghealthcouncil.gov.au/portals/0/review%20of%20medical%20intern%20training%20final%20report.pdf)

54. Sen Gupta TK, Muray RB, McDonell A, Murphy B, Underhill AD: *Rural internships for final year students: clinical experience, education and workforce*. *Rural Remote Health* 2008, **8**:827.

55. Rowe CJ, Campbell IS, Hargrave LA: *Rural experience for junior doctors: is it time to make it mandatory?* *Australian Journal of Rural Health* 2014, **22**:63-67.