

Work related factors affecting the retention of medical officers in the preventive health sector in Sri Lanka

Mahendra Arnold (✉ mahendra_arnold@yahoo.com)

Ministry of Health Sri Lanka <https://orcid.org/0000-0001-7746-8515>

Dinusha Fernando

Regional Director of Health Services Office, Puttalam

Kapila Wickramanayake

Medical Supplies Division, Ministry of Health

Palitha Karunapema

Health Promotion Bureau, Ministry of Health

Sepali Wickramatilake

Regional Director of Health Services, Matale

Yamuna Fernando

Base Hospital, Panadura

Chandani Denawaka

MOH Office, Nugegoda

Pasyodun Koralage Buddhika Mahesh

Ministry of Health

Sujeewa Panditharathna

Regional Director of Health Services Office, Rathnapura

Research

Keywords: Retention, Recognition, Work Schedule, Remuneration, Responsibility

DOI: <https://doi.org/10.21203/rs.3.rs-21948/v3>

License: © ⓘ This work is licensed under a Creative Commons Attribution 4.0 International License. [Read Full License](#)

Abstract

Background: Human resources are the livelihood of all types of organizations. The biggest challenge that organizations are facing today is not only managing these resources but also retaining them. Preventive health sector plays a vital role in the healthcare system. Medical Officers of Health (MOH) are the Medical Officers providing preventive health services in Sri Lanka. This study was carried out to explore the factors affecting retention of Medical Officers of Health in the preventive health sector in Sri Lanka.

Methods: A descriptive cross sectional study was carried out among Medical Officers of Health in the Colombo district which has 18 MOH Offices with 64 Medical Officers. A pre-tested self-administered questionnaire was used as the study instrument. Data were analyzed using descriptive analysis, correlation and regression analysis.

Results: Of the 74 Medical Officers 64 responded with a response rate of response rate of 86.5%. Regression analysis showed that all four variables; recognition, work schedule, remuneration and responsibility are positively and significantly correlated with retention of Medical Officers of Health in the preventive health sector. The variable 'work schedule' showed the highest impact to the retention of Medical Officers of Health.

Conclusions: In order to retain trained Medical Officers of Health in the Sri Lankan preventive health sector, health authorities should address the factors that influence retention. If policy makers fail to address these factors the preventive health services will be negative impact due to shortage of key service providers.

Background

Globally healthcare sector has been showing a dynamic change and improvement. Although being a developing country, has achieved very good health indicators compared to other similar settings. Certain indicators such as related to the control of vaccine preventable diseases are in par with developed countries. In Sri Lanka healthcare services are mainly provided by the government sector. The healthcare institutions range from primary health care institutions at the community level which provides mainly Out Patient (OPD) treatment to tertiary care hospitals with major specialties and sub specialties. The healthcare service network is spread throughout the country and goes up to grass root level where even domiciliary healthcare services are also provided [1].

Preventive healthcare service is considered as the backbone of the healthcare services in a country. The main emphasis of this healthcare system is to prevent diseases and thereby minimize the burden otherwise the curative sector would be subjected to [2]. The government healthcare system curative and preventive sector. Curative sector is hospital-based treatment services and are manned by Medical Officers. The preventive health services at the community level is provided by the Medical Officers of Health (MOH) office. Curative healthcare institutions (Hospitals) and MOH Offices are can be located in the same geographical area. However, the type of service provided by the two institution categories are different where hospitals provide treatment and MOH Offices provides preventive healthcare services. The medical officers in the curative sector work within hospitals and services of medical officers in the preventive sector are mainly in the field/community setting. The Medical Officers attached to the preventive sector are called Medical Officer of Heath (MOH). The entire country is covered by geographically demarcated Medical Officers of Health areas. Medical Officers of Health (MOH) are the main

medical staff in a MOH office. They are responsible for the preventive health services in their respective MOH area and play a vital role in preventing diseases and promoting health at the community level [2,3]. These services provided by the MOH office include: immunization for disease prevention, disease control programmes such as dengue, leptospirosis, malaria, filaria, maternal health services, child health services, services for youth and elderly, school health services, food safety, environmental health services, occupational health services, well women services, prevention programmes for Non Communicable Diseases and health promotion etc. [3]. The function of the MOH area mainly depends on the performance of the MOH as they not only functions as service providers but also as a technical expert in preventive health, as supervisors and managers.

Employee retention refers to the length of time employees stay with the organization [4]. Retention of productive employees is a major concern of Human Resource (HR) professionals and business executives. It is more efficient in the system's perspective to retain a quality employee than to recruit, train and orient a replacement employee of the same quality [5,6]. Retention of human resources in the healthcare system, particularly doctors at district level is a great challenge faced by the decentralized health systems in poorly-resourced countries [7].

There are several predictors of a medical officer's willingness to retain in the preventive healthcare sector. It is a common belief that remuneration is one of the most important determinants of job retention. An attractive compensation package plays a critical role in retaining the employees [8,9,10,11]. Recognition is considered as one of the most important factors among non-financial rewards to increase retention of employees. It is used to strengthen the relationship between organization and people. Through the recognition employee feel rewarded and motivated [12,13]. Recognition can be described as the process where employees are rewarded in organizations by different status [14]. Intrinsic rewards like recognition, growth, feedback, opportunities lead employees more towards high job performance and motivation than extrinsic rewards like salary [15, 16]. The amount of responsibility placed on the employee can have either negative or positive effects on employee-retention [17,18]. **Doctors have different work schedules depending on their place of work and the work schedule has a big impact on their retention [19,20].**

Sri Lanka has a doctor to population ratio of around 1: 671 and the percentage need met is 91%. When the "percentage need met" is less than 100% it means a shortage [21]. In Sri Lanka the curative health sector is preferred by medical officers. Preventive health sector has become seemingly less attractive and medical officers in the preventive health sector tend to leave to the curative health sector [2]. When there is shortage of doctors and the preventive sector being less attractive, invariably the shortage in the preventive sector will be higher than the curative sector. The number of applicants for preventive health posts are low compared to curative health sector posts. For an example, in the Colombo Regional Director of Health Services area which include the administrative capital of the country, at the end of 2018 of the approved cadre of 86 Medical Officer of Health, there were only 74 attached to MOH Offices. Of these 74 MOH, 12 MOH have applied/requested transfers to curative care institutions for the year 2019 under the 2019 annual transfers [22]. This can potentially results in shortage of MOH. If MOH are not retained in the preventive health sector there would be a vacuum created and it

would be improbable to maintain quality preventive health services at the divisional level.. This would ultimately cause a major negative impact on the entire healthcare system.

This study was done to explore the factors affecting retention of Medical Officers of Health in the preventive health sector in Sri Lanka.

Methods

A descriptive cross-sectional study was conducted. The study population consisted of all 74 Medical Officers of Health in the preventive health sector attached to all 18 MOH Offices in the Regional Directorate of Health Services in Colombo district of Sri Lanka. The inclusion criteria was the Medical Officers being attached to the Preventive Health Sector as Medical Officers of Health. Medical Officers of Health who have not completed six months of service period were excluded. Considering the practical aspect of service provision in the preventive health sector, at least six months exposure is necessary for a Medical Officer to become well conversant with the system. Therefore, medical officers with less than six months service period in the preventive health sector were excluded since the officer would have not been sufficiently exposed to possible work related factors which could influence retention. The response rate was 86.5%.

Through review of literature, recognition, work schedule, remuneration, and responsibility were selected as factors affecting medical officers in the preventive health sector[9,11,13,14,18,20]. A 25 item questionnaire was prepared with expert inputs to measure these four domains and the MOHs' willingness to retain in the preventive health sector. Primary data was collected through a pre-tested self-administered questionnaire. Pre-testing was carried out involving 10 MOH working in MOH Offices in the Puttalam district. The questionnaires were administered in person at MOH Offices. However, since Medical Officers of Health's duties primarily involves field work the questionnaires were administered through mail where Medical Officers were not available in the MOH Office at the time of data collection. The internal consistency of the questionnaire was found to be satisfactory in the pre-test [23,24]. A coding system was adopted to conceal the identity of the respondent and hence the free expression of participants' actual attitudes and opinions was facilitated.. This improved the overall response rate and the response rates for each variable.

Domain scores were calculated for the willingness for retention, recognition, remuneration, work schedule and responsibility. Correlation analysis was carried out to see the association between these domain scores with non-parametric correlation coefficient analysis. Following hypotheses on retention of medical officers in the preventive health sector were formulated

- | | | |
|----|---|---|
| H1 | : | Positive and significant relationship exists between recognition and retention |
| H2 | : | Positive and significant relationship exists between work schedule and retention |
| H3 | : | Positive and significant relationship exists between remuneration and retention |
| H4 | : | Positive and significant relationship exists between responsibility and retention |

Multicollinearity was assessed by Variance Inflation Factor (VIF) and Tolerance Statistics. Multivariate analysis done with multiple linear regression. Ethical approval was obtained from the Ethics Review Committee of the National Institute of Mental Health, Sri Lanka.

Results

The questionnaire was administered to all 74 eligible medical officers and 64 responded with a response rate of 86.5%. Out of the respondents, majority (62.5%) were males. Nearly half of the participants (i.e. 48.4%) were between 31 to 40 years of age. The commonest (of 26.6% of participants) total service period was between 6 to 10 years.

Correlation analysis was performed to assess the correlations between the independent and dependent variable (i.e. retention) as shown in Table 1.

The correlation coefficients of 'recognition', 'work Schedule', 'remuneration' and 'responsibility' showed positive relationships and were statistically significant. The strongest positive significant association was shown between 'recognition and retention' with a coefficient of 0.547 at a 0.001 significant level. ($r = 0.547, p < 0.001$). A positive and statistically significant correlation exists between 'responsibility and retention' ($r = 0.487, p < 0.001$), 'remuneration and retention' ($r = 0.439, p < 0.001$), 'work schedule and retention' ($r = 0.422, p = 0.001$).

The VIF values were below 5 and tolerance statistics are above 0.4. The findings indicated non-existence of multicollinearity within the data (Table 2).

The regression analysis (Table 3) reveals the regression coefficients of 'recognition', 'work schedule', 'remuneration' and 'responsibility' are statistically significant. The regression analysis shows the highest magnitude of 1.039 represents the 'work schedule'. It indicates that a positive relationship between work schedule and retention in the preventive health sector. This is significant at 0.01 level. The second highest magnitude of 0.564 is for Recognition and it is significant at a 0.01 level. This indicates that there is a positive relationship between recognition and retention. A magnitude of 0.535 is seen for Remuneration and is significant at 0.01 level. This indicates a positive relationship between remuneration and retention. Responsibility showed

a magnitude of 0.440 and is statistically significant at 0.01 level. This reveals a positive relationship between responsibility and retention. All four hypothesis were positively and significantly accepted.

Discussion

This is the first documented study exploring impact of work related factors on retention of medical officers in the preventive health sector in Sri Lanka. Based on the results from correlation analysis, it showed that there is a positive relationship between selected independent variables (Recognition, Work Schedule, Remuneration and Responsibility) and dependent variable Retention. Among four independent variables the strongest positive significant association was seen between Recognition and Retention with a coefficient of correlation of 0.547 at a 0.001 significant level. ($r= 0.547, p< 0.001$). Regression analysis showed that highest magnitude (1.039) represents the work schedule. All four variables showed a positive relationship with retention in the preventive health sector and was significant at 0.01 level. The use of a correlational design and multivariate analysis aided in the development of new knowledge and forming hypotheses that could be used to inform further research.

The current study provided support on the positive and significant relationship between compensation and **job retention** documented in studies by Mabaso [10] and Chaulagain [11]. However, the findings were not in line with the study by Judge [8] where correlation between pay and job retention did not significantly correlate. Nel *et al* [15] indicated that intrinsic rewards like recognition lead employees more towards high job performance, motivation and retention. The findings of the current study supported this as positive and significant relationship existed between recognition and retention.

A study by Ning [18] among 650 full-time nurses employed in six Chinese hospitals on factors related to job retention showed that amount of work responsibility was a factor contributing for low retention. In contrast, the current study showed a positive and significant correlation between responsibility and retention. This may be due to the facts the studies were on two different staff categories and medical officers are specifically trained and required to take a higher level of responsibility compared to other health staff categories. In a study by Yaseen [20] on factors affecting doctors retention level, showed that not getting proper work schedule/structure was one of the main factors affecting retention. The current study revealed that there was a positive and significant association between work schedule and retention of medical officers. This indicates that the medical officers are satisfied with the current work schedule in the preventive health sector.

It is generally perceived among the medical officers that, medical officers in the curative sector draw a higher financial gain than the medical officers in the preventive sector due to the additions like higher extra-duty payments and holiday-payments. The satisfaction level of medical officers with regard to the variable 'remuneration' was lower than the other three independent variables studied. The MOH have a lower probability of working on holidays except during special programmes like dengue control programmes scheduled on public holidays. However, it is not a regular occurrence. Due to non-availability of night duties and on-call duties the

amount earned as extra-duty payment is also potentially less. Unlike the medical officers in the curative sector, MOH being field officers are entitled to travelling and subsistence allowance. However, these allowances have very low monetary value and have not been revised for many years in line with the current cost of travelling. The health authorities should take serious note of this fact and revise the rates of overtime and other allowances in the preventive health sector to be in par with the payments in the other sectors.

Being the first documented study on factors affecting retention of Medical Officers of Health (MOH) in the preventive health sector, the findings advances the knowledge on the retention issues specifically affecting the Medical Officers in the government healthcare system in Sri Lanka. Since the government healthcare sector is the main healthcare provider, the government fully investing to train medical undergraduates and postgraduates under the free education system from the state universities and the government healthcare service provision is heavily dependent on Medical Officers, the new knowledge on factors affecting the retention of Medical Officers in Sri Lanka would be much useful for the government to incorporate to the healthcare system and improve the retention of Medical Officers in the preventive health system.

There were limitations of the study. Data collection from medical officers was difficult due to their busy work schedules and having to collect data in a setting such as clinics where patient care is given. This may have contributed to the observed non-response rate. The study was conducted in the Colombo district. There are many geographical, cultural and economic variability in different districts in Sri Lanka which can influence the factors studied. Hence, the findings cannot be generalized to the entire country. Nearly half of the participants were between 31 to 40 years of age. The younger age group tend to change jobs. This may also had an influence on the retention of medical officers in the current position in general.

Conclusions

Work related factors: 'recognition', 'work schedule', 'remuneration' and 'responsibility' have a positive effect on willingness of medical officers to retain in the preventive health sector in Sri Lanka. Among four factors, the work schedule showed the highest impact to the retention of Medical Officers of Health. The policy makers in the Ministry of Health of Sri Lanka must take measures to create favourable contexts related to these factors in order to improve retention of Medical Officers of Health in the preventive health sector.

Declarations

Availability of data and materials

The datasets used and/or analyzed are available from the corresponding author on reasonable request.

Declarations

Ethics approval and consent to participate

Ethical approval was obtained from the Ethics Committee of the National Institute of Mental Health

Consent for publication

Not applicable

Competing interests

The authors declare that they have no competing interests.

Funding

The study was self-funded and was not funded by a third party.

Authors' contributions

SMA was involved in the conceptualization of the study, data collection, data analysis and drafting of the manuscript. CJD, RMSDF, HMKW, WYJF and MSKW were involved in data collection and data entering. PKBM, RPPK and NGSP revised the manuscript. All authors read and approved the final manuscript.

Acknowledgements

Not applicable

Authors' information

Author details 1. Quarantine Unit, Ministry of Health, Sri Lanka. 2. Office of Regional Director of Health Services, Puttalam, Sri Lanka. 3. National Institute of Mental Health, Sri Lanka. 4. Health Promotion Bureau, Sri Lanka. 5. Office of Regional Director of Health Services, Matale, Sri Lanka. 6. Base Hospital, Panadura, Sri Lanka. 7. Office of Medical Officer of Health, Battaramulla. 8. Ministry of Health, Sri Lanka. 9. Office of Regional Director of Health Services, Rathnapura. Sri Lanka.

Abbreviations

MOH – Medical Officer of Health

References

1. Ministry of Health, Sri Lanka. National health strategic master plan 2016-2025, Health Administration and human resource for health. 2016.

http://www.health.gov.lk/moh_final/english/public/elfinder/files/publications/HMP2016-2025/Health%20%20Admin%20-%20%20HRH.pdf.

2. Fernando, DN. Healthcare system in transition, An overview of Sri Lanka's healthcare system. *Journal of Public Health Medicine*. 1997; 22(1):14-20.
3. Ministry of Health, Nutrition and Indigenous Medicine, Sri Lanka. Annual Health Bulletin – 2015. 2017. http://www.health.gov.lk/moh_final/english/public/elfinder/files/publications/AHB/2017/AHB%202015.pdf.
4. Cappelli P. A market-driven approach to retaining talent. *Harvard Business Review*. 2000. <https://hbr.org/2000/01/a-market-driven-approach-to-retaining-talent..>
5. Society for Human Resource Management. Managing for Employee Retention. <https://www.shrm.org/resourcesandtools/tools-and-samples/toolkits/pages/managingforemployeeretention.aspx..>
6. Huang IC, Lin HV, Chuang CH. Constructing factors related to worker retention. *International Journal of Manpower*. 2006;27(5): 491-508.
7. Sirili N, Frumence G, Kiwara A, Mwangu M, Anaeli A, Nyamhanga T, Goicolea I, Karin Hurtig Retention of medical doctors at the district level: a qualitative study of experiences from Tanzania. *BMC Health Serv Res*. 2018;18:260. doi: 10.1186/s12913-018-3059-0.
8. Judge TA, Piccolo RF, Podsakoff NP, Shaw JC, Rich BL. The relationship between pay and job satisfaction: A meta-analysis of the literature. *J. Vocational Behav*. 2010;77: 157-167. doi. <https://doi.org/10.1016/j.jvb.2010.04.002>
9. Singha C, Singha R. Factors Affecting Employee Retention: A Comparative Analysis of two Organizations from Heavy Engineering Industry. *European Journal of Business and Management*. 2012;4(3): 145-162. file:///C:/Users/user/AppData/Local/Temp/1324-2984-1-SM.pdf.
10. Mabaso, CM, Dlamini, BI 2017, 'Impact of Compensation and Benefits on Job Satisfaction', *Research Journal of Business Management*. 2017; 11(2):80-90. doi:3923/rjbm.2017.80.90
11. Chaulagain, N, Khadka, DK. Factors influencing job satisfaction among healthcare professionals at Tilganga Eye Centre, Kathmandu, Nepal. *International Journal of Scientific & Technology Research*. 2012;1(11):32-36.
12. Barton GM. Recognition at work. Scottsdale: World at Work. 2002: 51-55.
13. Romano L. Beyond reward: why cash is no longer enough. 2003;3(1)): 12-13.
14. Danish QD, Usman A. Impact of reward and recognition on job satisfaction and motivation: An empirical study from Pakistan. *International Journal of Business & Management*. 2010;5(2):159-167.
15. Nel PS, Gerber PD, Van Dyk PS, Haasbroek GD, Schultz HB, Sono T, Werner A. *Human Resources Management*. Oxford University Press, Cape Town;2001.

16. Robbins SP, Judge TA. Organisational behavior. 15th ed. Pearson: USA; 2012.
17. Bardad SA. Factors influencing retention of essential healthcare providers at facility level in mandera county: a case study of mandera county referral hospital, Kenya. 2017.
<http://publications.universalhealth2030.org/ref/d15a4c64e07f02c7d1eec3314e2f951e>.
18. Ning S, Zhong H, Libo W, Qiujie L. The impact of nurse empowerment on job satisfaction. *Journal of Advanced Nursing*. 2009; 65(12):2642-8. doi: 1111/j.1365-2648.2009.05133.x
19. Tsai Y, Huang N, Chien L, Jen H, Chiang J, Chiou S. Work hours and turnover intention among hospital physicians in Taiwan: does income matter?. *BMC Health Serv Res*. 2016;16: doi: <https://doi.org/10.1186/s12913-016-1916-2>.
20. Yaseen, A. Effect of Compensation Factors on Employee Satisfaction- A Study of Doctor's Dissatisfaction in Punjab. *International Journal of Human Resource Studies*. 2013;3(1):142-157. doi: <https://doi.org/10.5296/ijhrs.v3i1.3351>
21. Dileep De Silva. How many doctors should we train for Sri Lanka? System dynamics modelling of training needs. *Ceylon Medical Journal* . 2017 (62) 4
22. Ministry of Health Sri Lanka. Transfers. http://www.health.gov.lk/moh_final/english/others.php?pid=87
23. Lavrakas PJ. Cronbachs Alpha. *Encyclopedia of Survey Research Methods*. 2008, doi: <http://dx.doi.org/10.4135/9781412963947>.
24. Nunnally JC. *Psychometric theory*. 2nd ed. New York: McGraw-Hill; 1978

Tables

Table 1: Correlation matrix between attitude scores with spearman correlation coefficient

	Recognition	Work schedule	Remuneration	Responsibility	Retention
Recognition	r= 1.00 p= NA	r= 0.369* p= 0.003	r= 0.493* p<0.001	r= 0.615* p<0.001	r= 0.547* p<0.001
Work schedule	r= 0.369* p= 0.003	r= 1.00 p= NA	r= 0.563* p< 0.001	r= 0.300* p= 0.016	r= 0.422* p= 0.001
Remuneration	r= 0.493* p< 0.001	r= 0.563* p< 0.001	r= 1.00 p= NA	r= 0.302* p= 0.015	r= 0.439* p< 0.001
Responsibility	r= 0.615* p< 0.001	r= 0.300* p= 0.016	r= 0.302* p= 0.015	r= 1.00 p= NA	r= 0.487* p< 0.001
Retention	r= 0.547* p< 0.001	r= 0.422* p= 0.001	r= 0.439* p< 0.001	r= 0.487* p< 0.001	r= 1.00 p= NA

*Correlation is significant at the 0.01 level (2-tailed).

Table 2: Multicollinearity analysis among the four predictors

Variable	Co-linearity Statistics	
	Tolerance	VIF
Recognition	0.749	1.335
Work Schedule	0.613	1.632
Remuneration	0.551	1.815
Responsibility	0.790	1.266

Table 3: Multiple linear regression analysis

Variable	Unstandardized Coefficients		Standardized Coefficients	t	Significance
	B	Std Error	Beta		
Recognition	0.564	0.128	0.489	4.411	0.000
Work Schedule	1.039	0.185	0.580	5.607	0.000
Remuneration	0.535	0.121	0.489	4.418	0.000
Responsibility	0.440	0.113	0.444	3.903	0.000