

Job satisfaction among general surgeons and their perception of standards of surgical care provided within the health ministry structure in Sri Lanka

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Abstract

Introduction

A surgical career is challenging but provides opportunity for tremendous professional satisfaction. Research has shown that improved surgical infrastructure and human resources to be associated with better clinical outcomes, patient satisfaction and surgeons' job satisfaction. In Sri Lanka, general surgical services are predominantly delivered by surgeons employed by Ministry of Health (MoH).

Objectives

To assess the job satisfaction, perceptions on available facilities and quality of provided surgical services among general surgeons affiliated to MoH.

Method

A self-administered questionnaire based cross-sectional study evaluated the surgeons' opinion on adequacy of human resources and infrastructure at working institutions and the quality of provided care on elective general surgery, emergency trauma and emergency non-trauma surgical care. Job satisfaction was assessed using Andrew-Withey scale.

Results

The response rate was 49.4%(n=78). Majority of general surgeons were 'satisfied' (n=49,62.8%) or 'extremely satisfied' (n=7,9.0%) with their job while 15(19.2%) and 7(9%) were 'neutral' and 'unsatisfied' respectively.

Twenty-seven of 29(93.1%) Teaching Hospital(TH)-surgeons, 12/18(66.7%) of Provincial/District General Hospital(PGH/DGH)-surgeons and 17/31(71.8%) Base Hospital(BH)-surgeons were 'extremely satisfied' or 'satisfied' (p-value=0.004). Only 14 of 25(56%) domains assessing the adequacy of infrastructure and manpower had a positive response rate over 50% by participants. Many

believed the quality of elective general surgical care (n=67,89.3%) to be satisfactory than emergency non-trauma surgical care (n=55,70.5%) and trauma care (n=48,61.5%). Distribution of surgeons satisfied on trauma care within THs(n=22,75.9%) over PGH/DGHs(n=9, 50%) and BHs(n=17, 54.8%) was significant (p=0.015) in contrast to other service domains.

Conclusions

Overall majority of general surgeons were satisfied with their job with a significant proportion affiliated to THs. Many believed that available manpower and infrastructure to be suboptimal for ideal surgical care especially at BHs. Surgeons were satisfied on provided elective services than emergency and trauma care.

Introduction

Job satisfaction is a simple personal perception about ones' employment, but its' conceptual foundation has been complexly studied using various instruments [1]. Positive job satisfaction retains qualified workforce, achieves better productivity, delivers better customer-care and result in well-functioning organizations. Higher job satisfaction buffers against negative influences like employment-related stress [1]. A surgeons' career is demanding with many physical, psychological and spiritual challenges; yet it provides great rewards with tremendous personal and professional satisfaction [2]. However, the challenging nature of a surgical life may lead to substantial personal distresses to individuals and their families [3]. Professional stresses of a surgical life may contribute negatively, thus surgeons have a higher prevalence of burnout, psychiatric morbidity, and depression rates than the general population [4]. Studies have demonstrated strong associations between better working conditions for surgeons and patient satisfaction [4, 5]. Improved service delivery for surgical patients through improved infrastructure and human resources have led to better clinical outcomes, patient satisfaction and surgeons' job satisfaction [5-7]. Majority of studies on surgeons' job satisfaction are from developed countries.

Despite being a low-middle income country in the World Bank classification [8], Sri Lanka has a well-established state driven health care system. Ministry of Health and Indigenous

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Medical Services(MoH) is the main health care service provider. General surgeons are positioned-in from Type-B Base Hospitals to National Hospitals in MOH organizational structure. Due to ill-planned human resource management governed by non-updated decades-old government circulars [9], general surgeons working in the Base Hospital (BH)s and several District General Hospital (DGH)s are expected to cover both elective and emergency 'surgical' services that should ideally be provided by surgical sub/finer-specialties. This added burden has a potency to create a negative impact not only on quality of overall patient care, but also on general surgeon's job satisfaction. To the best of authors' knowledge, general surgeons' job satisfaction has not been studied in Sri Lanka before. In such a background, this study aims to assess the job satisfaction, perceptions on available facilities and quality of provided surgical care among general surgeons affiliated to MoH.

Method

This cross-sectional study was conducted among the general surgeons working at different hospital categories affiliated to the MoH, throughout Sri Lanka. A self-administered questionnaire containing five domains assessed the job satisfaction and the perception on delivered care. First domain evaluated the institutional availability of human resources and infrastructure required for proper functioning of a general surgical unit compared to the position paper developed by the Association of General Surgeons of Sri Lanka (AGSSL), summarized in Table-1. Second, third and fourth domains evaluated the General Surgeons' perception about the provided surgical care at his/her institution on elective general surgery, emergency trauma care and emergency non-trauma surgical care respectively. Fifth assessed the individuals' job satisfaction objectively using the Andrew-Withey(A-W) scale [1, 10]. Within the questionnaire, opportunity was provided to the respondents to reason out the answers to achieve qualitative assessment. The pre-tested questionnaire was posted to all Specialist General Surgeons affiliated to MoH to be returned anonymously. Data analysis was done using SPSS (version 21). Levels of job satisfaction, basic socio-demographic details and availability of infrastructure facilities and human resource were presented as frequency distributions. Associations between the surgeon's hospital category with the levels of overall job satisfaction and perception on provided services in elective surgeries, emergency trauma care and emergency non-trauma care were assessed using Chi square test.

Ethical clearance was obtained from the Ethical Review Committee of Sri Lanka Medical Association.

Results

Seventy-eight out of 158 board certified consultant general surgeons responded with a response rate of 49.4%. Twenty-nine of 48 (60.4%) TH surgeons, 18 of 48 (37.5%) PGH/DGH surgeons and 31 of 62 (50%) BH surgeons responded to the survey. Out of those responded, approximately similar percentages were employed at BHs (39.7%, n=31) and THs (37.2%, n=29). The remainder of 18 (23.1%) were employed at a PGH/DGHs. Majority of 47(60.3%) were between 45-55 years of age, while 17 (21.8%) and 14 (17.9%) were above 55 years and below 45 years respectively (Figure 1).

Among all participants, 7(9%) and 49(62.8%) had responded as 'extremely-satisfied' and 'satisfied' on their overall job satisfaction according to the A-W scale. Fifteen (19.2%) were 'neutral' and 7(9%) were 'unsatisfied'. Stratification of the overall satisfaction by the hospital type showed, 93.1%(n=27) of TH, 66.7%(n=12) of PGH/DGH and 71.8%(n=17) of BH general surgeons were to be either 'extremely satisfied' or 'satisfied' on their job. Distribution of 'extremely satisfied' or 'satisfied' general surgeons within the hospital categories were significant(p=0.004). Of the 7 'unsatisfied' general surgeons, one (14.3%) was employed at a TH and three (42.8%) each were placed at the other types of hospital categories (Figure 2).

Majority of participants, 66.7%(n=52) were confident to recommend his/her working position to a colleague. The percentage was significantly higher (p=0.029) among surgeons employed at THs-82.8%(n=24) compared to ones at PGH/DGHs (n=10, 55.6%) and BHs (n=18, 58.1%).

Perception on available facilities at the current working station

Table-2 and table-3 summarize the frequency distribution of the general surgeons who agreed on adequacy/availability of human resources and infrastructural facilities in their institutions respectively. Out of the 25 points questioned, 14(56.0%) had a positive response rate of 50% or more in overall evaluation. Positive response rate was highest among those at THs (96.0%), followed by PGH/DGHs (60.0%) and BHs (52.0%). Adequacy of junior surgical/anaesthetic staff, availability of specialist anaesthetic/radiological and surgical subspecialty support during weekends and adequacy of nursing and other support staff were the important points that had less than 50% positive responses in overall evaluation. In addition, availability of critical care and advanced radiology units and instruments were the vital points that had less than 50% positive responses. Percentage positive responses were higher in THs than BHs and PGH/DGHs.

Table 1. Minimum requirements need to be established to start a general surgical unit in a hospital

1	Wards	Separate male and female wards
2	Clinics	Minimum of one 4-hour clinic session per week
3	Operating Theatre	Minimum of 8 hours elective operating time per week
		Adequate time for emergency theatre time per workload
		Equipped with adequate instruments and supplies to handle casualties and a range of elective general surgical cases
		Laparoscope with basic instruments
4	Endoscopy facility	Fiber -optic upper and lower GI video-endoscope with facility for biopsy
5	Anaesthetic services	24-hour Anaesthetic cover, preferably with consultant supervision
6	ICU	Adequate number of ICU beds depending on hospital workload
7	Radiology	24-hour facility for plain radiography
		USS - 24-hour FAST facility and adequate elective ultrasonography facility
		CT - Access to CT scanning for elective and emergency cases
		Mammography - Access to Mammography facilities
8	Laboratory services	24-hour basic blood tests
		Access to hormone assays and blood culture
9	Blood Bank services	24-hour grouping/crossmatching and issuing of blood and blood products
10	Histopathology services	Access to histopathology and FNAC reporting, including urgent reporting for diagnosis of malignancies
11	Staffing	Adequate number of medical officers (Minimum of 4)
		Adequate nursing staff including for maintaining laparoscopic and endoscopic instruments
12	Accommodation	Quarters within easy reach to the hospital with electricity and water, to an acceptable standard for a consultant
		Accommodation to junior medical staff and on-call room facilities if on-site permanent accommodation is unavailable for all doctors

Table 2. Frequency distribution of positive responses on the adequacy/availability of human resources by the type of hospital.

	Number of General Surgeons agreed (%)			
	TH (n=29)	PGH/DGH (n=18)	BH (n=31)	Total (n=78)
1. Adequacy of junior surgical staff	23 (79.3)	4 (22.2)	9 (29.0)	36 (46.2)
2. Adequate availability junior anaesthetic staff	18 (62.1)	4 (22.2)	8 (25.8)	30 (38.5)
3. Availability of Consultant Anaesthetist (Weekdays)	29 (100.0)	13 (72.2)	22 (71.0)	64 (82.1)
4. Availability of Consultant Anaesthetist (Weekends)	20 (69.0)	5 (27.8)	4 (12.9)	29 (37.2)
5. Availability of Consultant Orthopaedic Surgeon (Weekdays)	25 (86.2)	4 (22.2)	6 (19.4)	35 (44.9)
6. Availability of Consultant Orthopaedic Surgeon (Weekends)	19 (65.5)	2 (11.1)	1 (3.2)	22 (28.2)
7. Availability of other surgical specialties (Urology/Neurosurgery etc.)	21 (72.4)	2 (11.1)	3 (9.7)	26 (33.3)
8. Availability of Consultant Radiologist (Weekdays)	28 (96.6)	13 (72.2)	24 (77.4)	65 (83.3)
9. Availability of Consultant Radiologist (Weekends)	18 (62.1)	3 (16.7)	3 (9.7)	24 (30.8)
10. Availability of adequate nursing/ non-medical staff	24 (82.8)	4 (22.2)	7 (22.6)	35 (44.9)

(TH- Teaching Hospital, PGH/DGH- Provincial/District General Hospital, BH- Base Hospital, ICU/HDU – Intensive Care Unit/ High Dependency Unit, FAST-Focused Abdominal Sonography in Trauma, CT- Computed Tomography)

Table 3. Frequency distribution of positive responses on the adequacy/availability of infrastructural facilities and resources by the type of hospital.

	Number of General Surgeons agreed (%)			
	TH (n=29)	PGH/DGH (n=18)	BH (n=31)	Total (n=78)
1. Availability of reasonable theatre facilities	17 (58.6)	10 (55.6)	24 (77.4)	51 (65.4)
2. Availability of adequate elective theatre time	16 (55.2)	11 (61.1)	25 (80.0)	52 (66.7)
3. Availability of adequate emergency theatre time	20 (69.0)	12 (66.7)	23 (74.2)	55 (70.5)
4. Availability of reasonable critical care facilities (ICU/HDU)	22 (75.9)	10 (55.6)	6 (19.4)	38 (48.7)
5. Availability of laparoscopic facilities	21 (72.4)	12 (66.7)	24 (77.4)	57 (73.1)
6. Availability of fiber-optic endoscopic facilities	22 (75.9)	17 (94.4)	26 (83.9)	65 (83.3)
7. Availability of adequate ward space	25 (86.2)	10 (55.6)	22 (71.0)	57 (73.1)
8. Availability of adequate clinic time	22 (75.9)	13 (72.2)	28 (90.3)	63 (80.8)
9. Availability of histopathology services	28 (96.6)	13 (72.2)	18 (58.1)	59 (75.6)
10. Availability of emergency X-ray/ultrasound scan/FAST 24*7	22 (75.9)	10 (55.6)	5 (1.61)	37 (47.4)
11. Availability of CT scan/ Mammography facility	25 (86.2)	3 (16.7)	5 (16.1)	33 (42.3)
12. Availability of 24 *7 basic laboratory facilities	23 (79.3)	11 (61.1)	29 (93.5)	63 (80.8)
13. Availability of blood/urine culture facility	29 (100.0)	11 (61.1)	22 (71.0)	62 (79.5)
14. Availability of 24 *7 functioning blood bank facilities	22 (75.9)	18 (100.0)	18 (58.1)	58 (74.4)
15. Availability of reasonable accommodation for the surgeon	12 (41.4)	13 (72.2)	20 (64.5)	45 (57.7)

(TH- Teaching Hospital, PGH/DGH- Provincial/District General Hospital, BH- Base Hospital, ICU/HDU – Intensive Care Unit/ High Dependency Unit, FAST-Focused Abdominal Sonography in Trauma, CT- Computed Tomography)

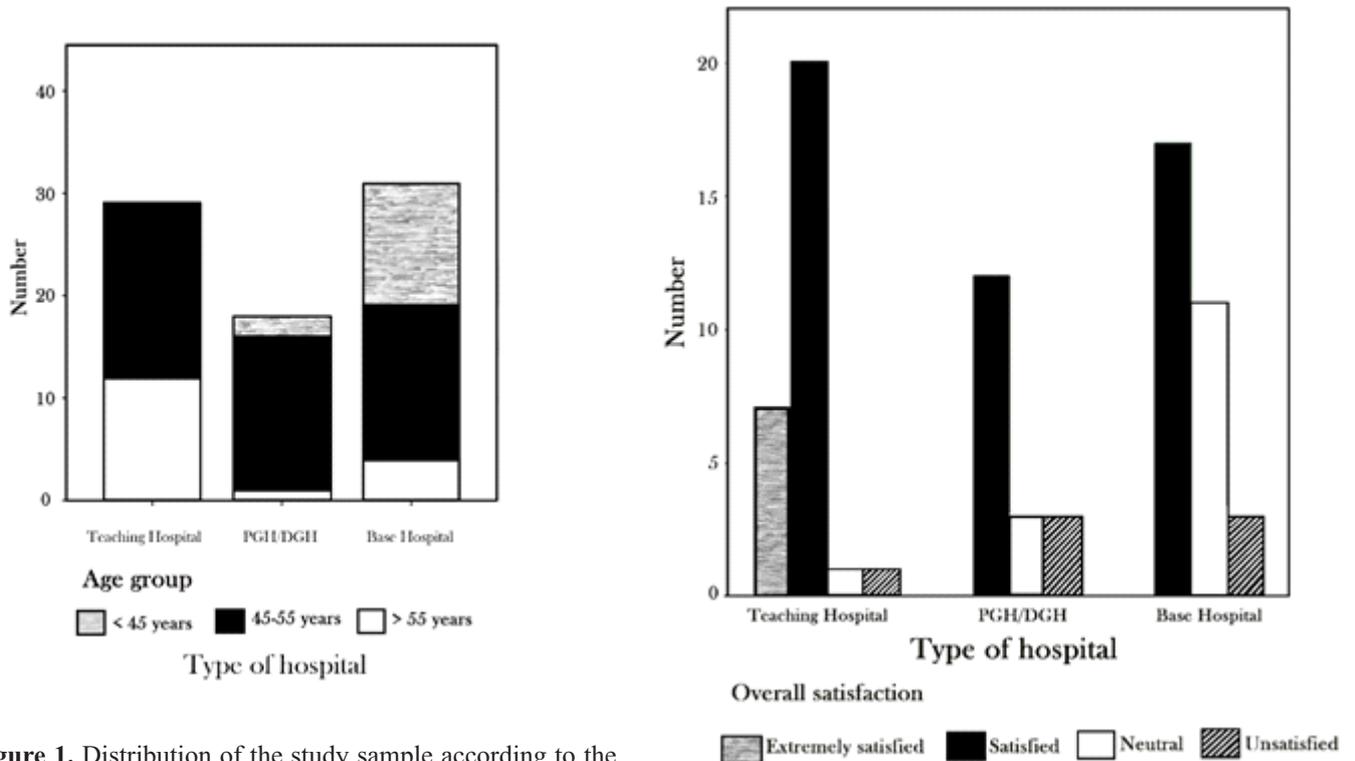


Figure 1. Distribution of the study sample according to the type of hospital employed, by age category (PGH/DGH – Provincial/District General Hospital)

Figure 2. Distribution of levels of overall satisfaction among the specialist general surgeons by the type of hospital (PGH/DGH – Provincial/District General Hospital)

Perception on elective general surgical care

Sixty-seven (89.3%) general surgeons believed to provide a satisfactory care for their patients during management of elective general surgical problems. The positive feedback percentage was higher among surgeons at THs (86.2%, n=25) and PGH/DGHs (100.0%, n=18) than surgeons at BHs (77.4%, n=24). Only 28(35.9%) general surgeons were satisfied with the available human resources for elective general surgery. Majority of these satisfied surgeons were from THs (58.6%, n=17), with similar proportions from PGH/DGHs (22.2%, n=4) and BHs (22.6%, n=7). On availability of surgical sub-specialists' (Orthopaedic, Urology, Neurosurgery etc.) support, TH general surgeons had higher percentage positive response (62.1%, n=18) than PGH/DGH (11.1%, n=2) or BH-surgeons (9.7%, n=3) ($p < 0.0001$). In the view of available non-surgical specialists' (Anaesthesia, Radiology, Pathology etc.) support in elective surgical care, 37(47.4%) respondents were satisfied. Among them, TH-surgeons (n=19, 65.5%) and PGH/DGH-surgeons(n=10,55.6%) were higher in percentage than BH-surgeons 8(25.8%) ($p=0.006$).

Only 30(38.5%) participants were satisfied with the available infrastructure facilities for elective surgery. TH-surgeons formed a significant majority of 17(58.6%) compared to surgeons at PGH/DGHs (n=4,22.2%) and BH (n=9,29.0%) ($p=0.017$). Majority believed that a better elective general surgical care could be provided at their institutions with improved human resources(n=59,75.6%) and upgraded infrastructure (n=60,76.9%). Further, 49(62.8%) were in the opinion that additional surgical and non-surgical specialists support would improve elective surgical care. Interestingly, 39(50.0%) responding general surgeons were happy to recommend the own station for a major elective surgery to a close relative, purely considering the available facilities. Distribution of this response across the THs(n=21,72.4%), PGH/DGHs (n=10,55.6%) and BHs(n=8,25.8%) was statistically significant($p=0.001$).

Perception on emergency trauma care

Considering quality of emergency trauma care delivered, 48(61.5%) general surgeons were satisfied over the standard of service provided. Surgeons at THs(n=22,75.9%) formed a significant majority of positive respondents than surgeons at PGH/DGHs(n=9,50.0%) and BHs(n=17,54.8%) (P-value=0.015). Only 24(30.8%) agreed on adequacy of human resources to manage major trauma at their institutions and again TH-surgeons(n=15,51.7%) formed the significant majority of positive respondents over PGH/DGH (n=3,16.7%) and BH(n=6,19.4%) surgeons (P-value=0.008). A minority 21(26.9%) agreed that the availability of surgical sub-specialists' (Orthopaedic, Neurosurgery etc.) support for

emergency trauma care is adequate, with a distribution among THs, PGH/DGHs and BHs of 11(37.9%), 5(27.8%) and 5(16.1%) respectively($p=0.005$). Nine (11.5%) surgeons specifically pointed out their unpleasant experiences on the support from centralized neurosurgical units in the managements of cases with severe head injuries. A little more than half of the study sample (n=43,55.1%) with almost equal percentage distribution between the hospital types, were satisfied over the available non-surgical specialists' (Anaesthesia/Radiology) support in trauma care at their hospital.

Only 21(26.9%) respondents were satisfied with the infrastructure for emergency major trauma care in their institutions. Surgeons at THs formed a significant majority (n=15,51.7%) compared to PGH/DGH(n=2,11.1%)-surgeons and BH(n=4,12.9%)-surgeons($p=0.001$). Majority of the general surgeons believed that they could provide a better trauma care at their institutions with improved human resources (n=58,74.4%) and upgraded infrastructure (n=67,85.9%). Further, 57(73.1%) were in the opinion that additional surgical and non-surgical specialists support would enhance the quality of trauma management. Only 24(30.8%) general surgeons felt assured for a close relative to have major trauma care at his/her hospital, purely considering the available facilities. This included 13(44.8%) employed at THs, 5(27.7%) at PGH/DGHs and 6(19.4%) employed at BHs ($p=0.007$).

Perception on emergency non-trauma surgical care

Fifty-five (70.5%) surgeons were satisfied with the quality of emergency non-trauma surgical care provided at their institution. This comprised of 21(72.4%) TH-surgeons, 13(72.2%) PGH/DGH-surgeons and 21(67.7%) BH-surgeons. Number of general surgeons who felt contented with the adequacy of available human resources for surgical emergencies was 33(42.3%). Almost similar to previous two surgical care categories, only 20(25.6%) surgeons were satisfied about the available surgical specialists' support during the management of non-trauma surgical emergencies. Fifteen (51.7%) TH surgeons were the substantial majority over 2(11.1%) PGH/DGH surgeons and 3(9.7%) BH surgeons ($p < 0.0001$). Only 20 (25.6%) were satisfied about the available hospital infrastructure for such management. Many believed that emergency non-trauma surgical care at their hospital can be enhanced by improved human resources(n=54,69.2%), better infrastructure(n=61,78.2%) and by additional specialists' support (n=46, 59%). Less than half of the study sample (n=36,46.2%) agreed they would recommend their working station for a close relative to have major non-trauma emergency surgical care considering the available facilities.

Discussion

MoH has a guidance over the hospital classification and expected level of care at each type of hospital [11, 12]. However, the minimum standard of infrastructure and human resources defined to each type of hospital has never been specified. Thus, in many instances, specialists including general surgeons are expected to deliver level of care comparable with world-expected norms with limited, insufficient and inadequate human resources and structural facilities. Such deficiencies in the working environment had shown to create a negative impact on ones' overall job satisfaction [3, 7].

Furthermore, in absence/limitation of trauma and other surgically treated disease registries, Sri Lanka does not have a validated island-wide system to retrieve patient outcome data. This has voided national indicators for surgical care in Sri Lanka. Additionally, due to lack of proper patient reported outcome data for surgical diseases, there is no quality assurance about the provided surgical care. With these factors, space for general surgeons to be satisfied and appreciated for the care they provide is limited. Present study details the service providers' perception on overall specialized general surgical care and job satisfaction within the MoH set up in Sri Lanka.

More than half the respondents expressed the inadequacy of human resources including surgical, anesthetic and nursing staff members. Inadequate supportive specialist categories required to provide surgical care (anesthesia/radiology) and surgical sub-specialties (orthopaedics/urology/ neuro-surgery) were raised as concerns in many institutions. These inadequacies were prominent during weekends and pronounced in BHs than the THs. Lack of elective theatre time was raised as a limitation by the TH- surgeons than the rest. Lack of critical care facilities was a prominent deficiency affecting BHs. In-house unavailability or lack of access of advanced imaging modalities (Computed Tomography/ Mammography) was another factor that disturb work performance of Bhs.

Understanding the work place deficiencies raised by the membership, AGSSL formed a minimum standard of requirements (human resources and infrastructure) needed for well-functioning of a general surgical unit in 2017 which was communicated to the MoH. This study evaluated the number/percentage of general surgeons satisfied with the adequacy of 25 domains of identified requirements, in accordance with that position paper. Unfortunately, there were 11 domains with less than 50% positive responses, suggesting the disappointment of general surgeons scattered around the country, on the available facilities. Insufficiencies were seen at every type of hospitals and were prominent in

BHs than PGH/DGHs and THs. Many BH-general surgeons pointed out, that the organizational misalignment between the line ministry and provincial government administrative structure as an important factor for this longstanding and ongoing problem.

Almost 90% of general surgeons were satisfied with the delivered elective general surgical services at their institutions. This was higher than the percentage of surgeons satisfied with the provided emergency trauma care (61.5%) and emergency non-trauma surgical services (70.5%). Lack of advanced radiological imaging for diagnosing and staging of diseases, lack of theatre facilities and critical care services were the main infrastructural deficiencies pointed by respondents that hamper elective surgical care. Irrespective of the deficiencies impeding the smooth delivery of elective general surgical care, many surgeons felt that they provide the maximum possible care. A few mentioned about the lack of commitment of the available staff and deficiency of team work as factors that need attention in order to improve the standard of elective surgical care. General surgeons' perception on the quality of provided emergency non-trauma care was similar to their perception on elective surgical services. The important additional consideration raised was the pronounced human resource (specialist and other staff) deficiencies during weekends.

According to the responding general surgeons, quality of delivered emergency trauma care was the least satisfied area of the surgical services. As detailed by a number of BH-general surgeons, their institutions lacked a dedicated 'accident and emergency' units. Lack of emergency X-ray/ trauma sonography facilities, deficiency of fulltime dedicated blood bank services and unavailability of intensive care units were the main physical deficiencies and the BHs were prominently affected. Almost all BH-surgeons had to manage orthopaedic trauma fulltime and several DGH-surgeons had to manage orthopaedic trauma during weekends. Many surgeons at BHs were in the opinion that the lack of specialist anesthetic support as a critical factor that compromise trauma care. Many general surgeons, mainly affiliated to BHs and DGHs raised the concerns over the management of patients with major head injury at their settings. According to them, lack of in-house advanced imaging facilities and transportation inadequacies have been delaying the anatomical diagnosis of head injuries. Number of general surgeons were pointing out on instances where centralized neurosurgical units not accepting cases with severe head injury. These events would have happened most probably due to infrastructural limitations at such units. As a result, there have been occasions where BH-general surgeons having to manage patients with severe head injury in ward settings. Lack of a proper trauma system with escalation criteria was identified

as an important island wide problem impeding a higher level of trauma care.

To the best of the authors' knowledge there are no previous studies on the job satisfaction of state sector general surgeons and their perception on the quality of delivered care in Sri Lanka. Further, there are no outcome studies on surgical diseases (including malignancies, other non-malignant diseases and trauma) at national or regional level, due to lack of centralized databases/registries in the country. Almost all available surgical outcome studies in Sri Lanka are from isolated research groups/units. Therefore, extrapolation of such results to the national level is not realistic and this information gap makes it difficult to correlate the outcomes of service provision with the available facilities. Couple of studies on major trauma outcome from the neighboring India have shown low overall survival outcome, when compared to the expected models of survival from western world [13, 14]. Insufficiencies in manpower and infrastructure have been postulated as important reasons for the suboptimal end results. Unavailability of national trauma registries to assess the magnitude of the problem leading to poor policy planning has been contributory to the meagre outcomes of major trauma care in India [14]. Similar comparisons of Sri Lankan trauma outcomes against the world accepted reference standards are not available. It is likely to be similar to the outcomes from the subcontinent due to similar socioeconomic background, infrastructural and human resource insufficiencies.

Conclusions and recommendations

The present study provides the perspective of the service provider on the quality of general surgical care delivered in Sri Lanka. Despite a higher proportion of responded general surgeons employed in the MoH being satisfied with their job, they have highlighted many deficiencies hindering the quality of delivered care. Low response rate among the general surgeons especially affiliated to the PGH/DGHs and BHs is a limitation of this study. Whether this lower response rate despite reminders itself, is an indirect measure of job dissatisfaction among the surgeons is unclear. Deficiencies were raised in emergency major trauma care than elective general surgery by the respondents. It is not practical to rectify all the said human resource and infrastructural deficiencies in each and every hospital at once. However, stakeholders need to have a long-term plan to develop the surgical facilities in already functioning hospitals, specially BHs and ill-equipped DGHs while implementing short/ intermediate-term plans to counteract the main shortages affecting the practice of safe general surgical care. In view of improving the service delivery to patients, following recommendations were suggested by the study participants for consideration of relevant authorities.

- Cadre expansions in order to provide adequate specialist and non-specialist medical cover, increasing the nursing and other supportive staff etc. needs to be performed with identified end points.
- Advanced radiological facilities and intensive care facilities needs to be expanded at least to the level of DGHs with regional BHs getting dedicated slots.
- There is a need to implement a proper trauma care system with dedicated regional level I trauma centers, thus BHs could function as level II trauma centers.
- Cluster on-call system may be arranged within nearby hospital groups, specially to cover weekends and to provide better work-life balance for the clinicians.

As suggested resolutions to overcome the service provision barriers are multidimensional, the authors recommend the MoH to liaise with all concerned parties to find out a long-lasting solution. Also, the MoH need to publish a minimum standard for surgical care at each level of hospitals and establish a system to monitor and ensure the said minimum standards are available at all times. In addition, professional bodies like College of Surgeons of Sri Lanka and the other surgical associations including AGSSL need to play an active role in the whole process to achieve a sustainable long-term solution to these complex and complicated problems affecting overall patient care.

All authors disclose no conflict of interest. The study was conducted in accordance with the ethical standards of the relevant institutional or national ethics committee and the Helsinki Declaration of 1975, as revised in 2000.

References

1. van Saane N, Sluiter JK, Verbeek JHAM, Frings-Dresen MHW. Reliability and validity of instruments measuring job satisfaction—a systematic review. *Occupational Medicine* 2003; 53: 191–200. DOI: 10.1093/occmed/kqg038
2. Brandt ML. Sustaining a career in surgery. *American Journal of Surgery* 2017; 214: 707-14. DOI: 10.1016/j.amjsurg.2017.06.022
3. Balch CM, Shanafelt T. Combating stress and burnout in surgical practice: a review. *Advances in Surgery* 2010; 44: 29-47. DOI: 10.1016/j.yasu.2010.05.018
4. Oskrochi Y, Maruthappu M, Henriksson M, Davies AH, Shalhoub J. Beyond the body: A systematic review of the nonphysical effects of a surgical career. *Surgery*. 2016; 159: 650-64 DOI: 10.1016/j.surg.2015.08.017
5. Mache S, Vitzthum K, Klapp BF, Groneberg DA. Improving quality of medical treatment and care: are surgeons' working conditions and job satisfaction associated to patient satisfaction? *Langenbecks Archives of Surgery* 2012; 397: 973-82. DOI: 10.1007/s00423-012-0963-3
6. Stupart DA, Watters DA, Guest GD, Cuthbert V, Ryan S. Dedicated emergency theatres improve service delivery and

- surgeons' job satisfaction. ANZ Journal of Surgery. 2013; 83: 549-53. DOI: 10.1111/ans.12001
7. Helewa RM, Kholdebarin R, Hochman DJ. Attending surgeon burnout and satisfaction with the establishment of a regional acute care surgical service. Canadian Journal Surgery 2012; 55: 312-16. DOI: 10.1503/cjs.000611
 8. The World Bank/Data/GDP per capita (current US\$) <https://data.worldbank.org/indicator/ny.gdp.pcap.cd>. Accessed on 25th June 2019
 9. Ministry of Health - Health Circulars; Transfer of patients from one institution to another; Circular Number 01-09/2002. Accessed and downloaded on 29th March 2020 at <http://www.health.gov.lk/CMS/cmsmoh1/viewcircular.php?cno=01-09/2002&med=english>
 10. Rentsch JR, Steel RP. Construct and concurrent validation of the Andrews and Withey Job Satisfaction Questionnaire. Educational and Psychological Measurement 1992; 52: 357-67.
 11. Hospital Re-categorization – 2005 (General Circular 02-61/05). Available at <http://www.health.gov.lk/CMS/cmsmoh1/viewcircular.php?cno=02-61/2005&med=english> Accessed on 6th March 2020
 12. Facilities offered at different categories of Medical care Institutions – 2020 (General Circular 01-18/2020). Available at <http://www.health.gov.lk/CMS/cmsmoh1/viewcircular.php?cno=01-18/2020&med=english> Accessed on 6th June 2020
 13. Goel A, Kumar S, Bagga MK. Epidemiological and trauma injury and severity score (TRISS) analysis of trauma patients at a tertiary care centre in India. National Medical Journal of India 2004; 17:186-9. PMID: 15372759
 14. Deshmukh VU, Ketkar MN, Bharucha EK. Analysis of Trauma Outcome Using the TRISS Method at a Tertiary Care Centre in Pune. Indian Journal of Surgery 2012; 74: 440-4 DOI: 10.1007/s12262-011-0404-5