

**AN INVESTIGATION INTO RECRUITMENT, RETENTION AND MOTIVATION OF
ADVANCED LIFE SUPPORT PRACTITIONERS IN SOUTH AFRICA**

University of Cape Town

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(GNGPAD001)

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ADVANCED LIFE SUPPORT PRACTITIONERS IN SOUTH AFRICA**

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Thesis Presented for the Degree of

DOCTOR OF PHILOSOPHY

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August 2015

Declaration

I Padarath Gangaram declare that the content of this research study is by my own unaided original work, except where specific indication is given to the contrary (by reference). This work has not been previously submitted to the University of Cape Town or any other University.

Signed by candidate

Padarath Gangaram

14 August 2015

Abstract

Background: Internationally, emergency medical services (EMS) are experiencing problems with recruiting, retaining and motivating advanced life support (ALS) practitioners. The persistent shortage of ALS practitioners in South Africa (SA) poses a challenge to the effective delivery of prehospital emergency medical care. The global demand for SA trained ALS practitioners is steadily increasing. SA EMS organisations are struggling to compete for these practitioners with the international market. The SA EMS industry currently has no effective approach to decrease the loss of ALS practitioners. This research study was therefore conceptualized to investigate factors that influence ALS practitioner recruitment, retention and motivation in an effort to enhance them.

Methods: This study followed a sequential, explanatory, mixed method design. The two phase study was non-experimental and descriptive in nature. The quantitative phase was comprised of ALS practitioners (n=1309) and EMS managers (n=60) completing questionnaires. The qualitative phase of the study involved data gathering through focus group (n=7) discussions with ALS practitioners and semi-structured interviews with EMS managers (n=6). Quantitative data was analysed with Statistical Package for the Social Sciences (SPSS). Inferential techniques included the use of correlations and chi squared test values which were interpreted using p-values.

Results: The study identified 19 recruitment, 25 retention and 16 motivation factors that influence ALS practitioners. Cumulatively, these factors revolved around the ALS practitioners' work environment, professional development and employment package. Strong recruitment factors that were identified include: ALS practitioner remuneration, skilled EMS management and organisation culture. Similarly, strong ALS practitioner retention factors that were identified include: skilled EMS management, remuneration, resources, availability of health and wellness programmes, recognition of practitioners, working conditions and safety and security. Strong ALS practitioner motivation factors included: remuneration, skilled EMS management and resources.

Conclusion: More ALS practitioner training institutions are required to improve the number of these practitioners. EMS organisations must improve the work environment, employment package and professional development opportunities for ALS practitioners. Such practices will encourage ALS practitioner recruitment, retention and motivation.

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Glossary of terms

Advanced life support refers to practitioners trained to provide the highest level of care in the prehospital environment. This level of care is provided by Critical Care Assistants, National Diploma in Emergency Medical Care (or equivalent) and Bachelor of Technology in Emergency Medical Care (or equivalently) qualified personnel. These providers are skilled to perform invasive procedures including advanced airway management, mechanical ventilation, femoral and external jugular vein cannulation, twelve-lead electrocardiogram monitoring, management of cardiac arrhythmias, administration of medication and adult and neonatal intensive care transfers. Bachelors of Technology in Emergency Medical Care or equivalent qualified providers are also equipped to perform rapid sequence intubation and fibrinolysis to patients experiencing ST-segment acute myocardial infarctions.

Basic life support is a level of care provided by Basic Ambulance Assistant qualified personnel in SA to patients who are critically ill in prehospital scenarios. The scope of practice of these practitioners is limited and does not involve any invasive procedures.

Critical patient refers to a seriously ill or injured patient requiring immediate emergency medical care.

Emergency medical services is an organisation which provides emergency medical care to patients in prehospital emergency scenarios prior to being transported to definitive medical facilities. These organisations employ basic, intermediate and / or advanced life support practitioners. Emergency medical services also undertake inter-facility transfers of critical patients.

Golden hour refers to the first hour following a traumatic incident. Within this crucial hour, emergency treatment must be provided to critical patients. Furthermore, these patients must be transported to a definitive medical facility to decrease the risk of death and disability.

Intermediate life support is a level of care provided by Ambulance and Emergency Assistant qualified personnel to critical patients in prehospital scenarios. Appropriately qualified providers are equipped with the knowledge and skills to perform certain invasive lifesaving procedures. These skills include intravenous fluid administration, needle thoracocentesis, manual defibrillation, needle cricothyroidotomy and the administration of certain medications.

Migration refers to the movement of persons from one geographical area to another in the same country (internal migration), from the public to private sector, from the medical to non-

medical field (cross industry migration) or from one country to another (international migration) for the common purpose of employment.(1)

Motivation refers to the practitioner's degree of commitment, creativity and desire to perform at their peak in an effort to achieve the organisation's goals.

Out-of-hospital refers to the prehospital setting.

Recruitment can be defined as the process of seeking and appointing the appropriately qualified practitioner for a vacancy within an organisation. The practitioner must analyse the attracting factors for the job prior to applying for the vacancy. The recruiting organisation will then screen all applications and select the best applicant through a selection process before integrating the new employee into the organisation.

Retention is a process by which various strategies are employed by organisations to retain ALS practitioners and ensure a steady workforce. The burden of hiring and training new ALS practitioners regularly, reduces productivity and impacts negatively on the organisation's performance.

List of abbreviations

ACLS	Advance Cardiac Life Support
ACS	Acute Coronary Syndrome
AEA	Ambulance and Emergency Assistant
AHA	American Heart Association
AIDS	Acquired Immunodeficiency Syndrome
ALS	Advanced Life Support
AMI	Acute Myocardial Infarction
ARREST	Amiodarone in Out-of-Hospital Resuscitation of Refractory Sustained Ventricular Tachycardia
ATLS	Advanced Trauma Life Support
BAA	Basic Ambulance Assistant
BBBEE	Broad-Based Black Economic Empowerment
BHF	Board of Healthcare Funders
BLS	Basic Life Support
BTEMC	Bachelor of Technology in Emergency Medical Care
BVM	Bag-Valve Mask
CBRN	Chemical, biological, radiological and nuclear
CCA	Critical Care Assistant
CCU	Critical Care Unit
CHF	Congestive Heart Failure
COEC	College of Emergency Care
COPD	Chronic Obstructive Pulmonary Disease
CPAP	Continuous Positive Airway Pressure
CPD	Continuing Professional Development
CPUT	Cape Peninsula University of Technology
CUT	Central University of Technology
CVD	Cardiovascular Disease

DALY	Disability Adjusted Life Year
DHS	District Health Care System
DUT	Durban University of Technology
DoH	Department of Health
EC	Emergency Centre
ECSSA	Emergency Care Society of South Africa
ECG	Electrocardiogram
ECP	Emergency Care Provider
ECT	Emergency Care Technician
EMC	Emergency Medical Care
EMD	Emergency Medical Dispatch
EMS	Emergency Medical Services
EMT	Emergency Medical Technician
ETI	Endotracheal Intubation
GCS	Glasgow Coma Scale
GOSe	Glasgow Outcomes Scale extended
GREAT	Grampian Region Early Anistreplase Trial
HCW	Healthcare Worker
HEI	Higher Education Institution
HEMS	Helicopter Emergency Medical Service
HIC	High Income Country
HIV	Human Immunodeficiency Virus
HMC	Hamad Medical Corporation
HPCSA	Health Professions Council of South Africa
HR	Human Resources
HRD	Human Resources Department
HRM	Human Resources Management

ICU	Intensive Care Unit
IM	Intramuscular
ISS	Injury Severity Score
ITLS	International Trauma Life Support
IV	Intravenous
KZN	KwaZulu-Natal
LMIC	Low- and Middle-Income Country
MANCOSA	Management College of South Africa
MGD	Millenium Development Goal
MVA	Motor Vehicle Accident
NCD	Non-communicable Disease
NDEMC	National Diploma in Emergency Medical Care
NECET	National Emergency Care Education and Training
OPALS	Ontario Prehospital Advanced Life Support
OSD	Occupation Specific Dispensation
PALS	Paediatric Advanced Life Support
PBEC	Professional Board for Emergency Care
PCI	Percutaneous Coronary Intervention
PEEP	Positive End Expiratory Pressure
PESTEL	Political, economic, social, technological, ecological and legal
PHC	Primary Health Care
PSVT	Paroxysmal Supraventricular Tachycardia
ROSC	Return of Spontaneous Circulation
RSI	Rapid Sequence Intubation
SA	South Africa
SAMHS	South African Military Health Services
SAPAESA	South African Private Ambulance and Emergency Services Association

SD	Standard Deviation
SGB	Standards Governing Body
SOP	Standard Operating Procedure
STEMI	ST-Segment Elevated Myocardial Infarction
TB	Tuberculosis
TBI	Traumatic Brain Injury
UJ	University of Johannesburg
WHO	World Health Organisation

Chapter One: Background

1.1 Introduction

This study investigated factors affecting advanced life support (ALS) practitioner recruitment, retention and motivation in South Africa (SA). ALS practitioners are trained to provide the highest level of care in the prehospital environment. They are skilled in performing invasive procedures including advanced airway management, mechanical ventilation, femoral and external jugular vein cannulation, twelve-lead electrocardiogram monitoring, management of cardiac arrhythmias, administration of medication, adult and neonatal intensive care transfers, rapid sequence intubation and fibrinolysis to patients experiencing ST-segment acute myocardial infarctions.(2)

This chapter highlights the background and the research problem. In SA, ALS practitioners are part of the larger group of healthcare workers (HCWs). ALS practitioner shortages are being experienced by the emergency medical services (EMS) sector.(3) The lack of access to ALS training facilities and an increase in demand for SA trained ALS practitioners by the international community both worsen this phenomenon.(4) Despite SA's large investment in the health sector, EMS organisations are unable to sufficiently attract, retain and motivate ALS practitioners.(5)

This chapter further presents the rationale for the study. Available literature reveals that the factors affecting local ALS practitioner recruitment, retention and motivation have not been researched in their entirety. Findings from this research offer a basis for strategic guidance to emergency medical care (EMC) professions, other related healthcare professions and policy makers.

This chapter ends by presenting the research question, objectives of the study and the layout of the thesis.

1.1.1 Emergency medical services in SA

South African EMS operations are outlined in the section below. Additionally, various prehospital EMC qualifications are presented. EMS in SA had their humble beginnings in the 1970s when a few fire departments began to provide basic prehospital medical assistance. Subsequently, EMS evolved to a more complex and sophisticated ground and air response.(6) Initially, these organisations employed first aid providers. However, due to the increasing demand for prehospital EMC, EMS and EMC qualifications were formalised and gave birth to a new profession in SA.(2, 7)

Internationally, EMS is categorised into two models, the Franco-German model and the Anglo-American model. The Franco-German model is physician-based while the Anglo-American model is ALS practitioner-based.(8) Generally, EMS operations in various parts of SA are based on a modified version of the Anglo-American model. This model allows for patients to be treated in the field by EMC practitioners prior to being transported to facilities for definitive care.

The country has two main streams of EMS providers *viz.* the public and private sector. The private EMS sector is largely metropolitan based. Many private EMS organisations are restricted regionally, however, a small number have national operations.(6) While the service provided by the private EMS sector is equivalent to their public counterparts, private EMS cater mainly for those patients who can afford to pay.(9) The Departments of Health (DoH) in each of the country's nine provinces are responsible for the designated non-profit public sector EMS. These organisations are mandated to respond to, treat and transport all victims of emergencies.(5) Of the 176 EMS providers registered with the Board of Healthcare Funders, only 117 provide ALS services.(10)

EMS operations are labour intensive and depend on the professional preparedness of EMC practitioners. In SA, these practitioners are capable of providing basic, intermediate and advanced life support EMC. The SA EMS sector is characterised by a two-tier response system. The first tier is comprised of basic and intermediate life support responses while the second tier is comprised of ALS responses.

1.1.2 Advanced life support

This section defines the practice of ALS and highlights its origins, internationally. It then explores ALS practitioners' professional training and preparedness. ALS forms the holistic practice of a collection of procedures and techniques by a trained ALS practitioner.(11) These procedures embrace lifesaving skills such as advanced airway management, mechanical ventilation, intravenous (IV) fluid administration, administration of various medicines, twelve-lead electrocardiogram (ECG) monitoring and manual cardiac defibrillation.(2, 12)

Internationally, prehospital ALS was conceived in 1967, when Pantridge pioneered the first mobile resuscitation unit in Belfast, Northern Ireland.(13) Staffed with an intensive-care physician and a nurse, the mobile resuscitation units provided ALS to patients who had suffered acute myocardial infarction (AMI). The idea of taking routine emergency centre(EC) ALS procedures into the prehospital environment was thus conceived.

ALS training for prehospital providers in SA commenced in the late 1980s.(7, 14) To this day, these practitioners undergo extensive training designed in accordance with the American Heart Association's (AHA) paediatric advanced life support (PALS), advanced cardiac life support (ACLS) and the American College of Surgeon's advanced trauma life support (ATLS) courses.(6) Thus, ALS practitioners are equipped to initiate treatment on a diverse set of critical patients suffering a diverse set of emergency conditions.

In SA, prehospital ALS practitioners include Critical Care Assistants (CCA), National Diploma in Emergency Medical Care (NDEMC) graduates and Bachelor of Technology in Emergency Medical Care (BTEMC) graduates.(6) The scope of practice for CCA and NDEMC qualified practitioners is identical. However, BTEMC graduates have an extended scope of practice, which includes the specialised skills of rapid sequence intubation (RSI) and fibrinolysis for ST-segment elevated myocardial infarctions (STEMI). ALS training programmes in SA are rated amongst the best in the world.(6)

Immediately after qualifying, SA trained ALS practitioners start working independently. However, this is dependent on compulsory registration with the Health Professions Council of South Africa: Professional Board of Emergency Care (HPCSA: PBEC) as a Paramedic or BTEMC practitioner. All ALS procedures and skills are designed and governed by the HPCSA: PBEC (Appendix A).

ALS practitioners are the most salient port of call in prehospital emergencies.(15) These practitioners are expected to possess excellent judgement to allow them to function optimally and independently in unstructured and constantly changing environments.(15) Furthermore, ALS practitioners are equipped with the knowledge, skills and experience to be able to make sound clinical decisions in time critical situations.(16, 17)

A routine day in the life of most ALS practitioners working in SA includes: skilled patient care coupled with critical decision making, medical rescue, managing a shift and/or an EMS base, stock control, conducting in-service job specific training, quality assurance of patient report forms, conducting research, managing financial practices and holding disciplinary enquiries.(18)

ALS practitioners play a critical role during disasters.(19) As part of the front line team they provide primary EMC to patients prior to extrication.(20) Their roles and responsibilities also extend to primary health care (PHC) facilities, which may be established following disasters.(20) These practitioners are also responsible for undertaking inter-facility transfers of intensive and coronary care unit (ICU and CCU,

respectively) patients in SA.(21) These critical patients are moved via mobile intensive care units between facilities for specialist care.(22)

ALS practitioners are versatile. Therefore, they are able to function effectively in various settings and efficiently meet their job demands.(23, 24) These practitioners function in various disciplines:

- **Operations**, where EMC is practised in the EMS environment in both ground and helicopter EMS (HEMS). Practitioners respond to emergencies in volatile environments. While HEMS improves EMS operations by reducing response times to emergencies, it also exposes the practitioner to various unique dangers of aviation medicine.
- **Emergency centres**, where EMC is practised in a hospital emergency centre.
- **Management**, where ALS practitioners function as a shift, base or EMS organisation manager.
- **Education**, where ALS practitioners are responsible for teaching and learning in Colleges of Emergency Care (COEC) and Higher Education Institutions (HEI).
- **Medical rescue**, where ALS practitioners are assigned to dedicated medical rescue units, functioning as a primary or secondary rescuer. The multiple disciplines of rescue are unique to the SA setting and include light and heavy motor vehicle rescue, fire and extrication rescue, steep slope and mountain rescue, confined space rescue, structural collapsed rescue, navigation and survival and swift water rescue. These practitioners are expected to locate, access, stabilise and transport the critical patient.
- **Public relations/Communications centre**, where ALS practitioners function in major communications centres, providing medical guidance to lower medically qualified EMC practitioners. The ALS practitioner's knowledge and skills are also utilised in major medical aid communications centres where they function as case managers.
- **Disaster management**, where ALS practitioners play an active role in EMC and rescue during and after disasters. ALS practitioners are also part of SA rescue teams which respond to disaster affected areas, internationally.
- **Special events**, where ALS practitioners provide medical and rescue backup at major sporting events and other public and mass gatherings.

- **Remote site medicine**, where ALS practitioners are employed to provide medical and rescue support at remote sites globally in the oil, gas, minerals and hospitality industries. They also practice as occupational health and safety practitioners in these settings.
- **Primary health care**, where ALS practitioners practice primary health care in varying settings, including cruise ships.
- **Medical representatives**, where ALS practitioners also function as medical representatives for major medical supply companies.

SA trained ALS practitioners are highly recommended internationally. This is due to their rich clinical skills, English-based training, dedication to their profession and strong work ethic.⁽⁵⁾ These practitioners can practice in Middle Eastern and African countries without taking registration examinations. However, these countries require practitioners to retain their HPCSA: PBEC registration. In countries including Canada, Australia, New Zealand, England and the United States of America, practitioners are required to take the compulsory entrance examination.

1.1.3 Demand for SA trained ALS practitioners

The financial and non-financial incentives offered by international EMS organisations are rewarding to the ALS practitioner. Increased demand for SA trained ALS practitioners has been fuelled by various international dynamics. These include: urban growth and economic expansion in the twenty-first century;^(25, 26) increased incidents of disasters;⁽²⁷⁻³⁰⁾ global demographics and changing migration patterns.^(31, 32) Aging populations in industrialised countries further prompt the demand for these practitioners.⁽³³⁻³⁵⁾ Demand for ALS practitioners in Middle Eastern countries has increased over the last two decades.⁽³⁶⁾ Financial stability through beneficial oil and gas explorations have given these countries the impetus to grow with developing economies.⁽³⁷⁾ Further, maturing healthcare systems internationally have increased the demand for experienced practitioners. The role and value of prehospital care in decreasing mortality and morbidity rates have subsequently been recognised as a key performance area in many healthcare systems.⁽³⁸⁾ Superior financial and non-financial incentives offered by the Middle Eastern countries draw ALS practitioners from all EMS systems worldwide. This creates a labour void in their countries of origin.^(39, 40)

SA trained ALS practitioners are also drawn to other countries in Africa. Oil exploration and extraction by western countries in middle, north, west and east Africa are attractive to these practitioners.(4, 40) They practice remote site medicine with telemedicine in safe and secure areas. These practitioners are rewarded with salaries that are five times more than what their SA counterparts earn. Examples of these salaries are reflected in the Facebook adverts, included below.

In SA, the demands for ALS practitioners are shared between many EMS and non-EMS service providers. These include: private EMS, provincial public EMS, municipal public EMS, South African Military Health Services (SAMHS), non-governmental organisations, various recruitment agencies, medical supplies companies and hospital ECs.

Postings from international organisations looking to recruit SA trained ALS practitioners, appear daily on various Facebook groups. As reflected, the financial and non-financial incentives provided by these organisations are attractive. The increased demand and nominal supply of ALS practitioners thus places undue stress on the country's fragile ALS population. Below are examples of such postings:

"...vacancy for a flight paramedic with the UAE Air Force SAR program. This post is for ALS only. Only applicants with CCA, NDEMC or BTEMC will be considered. Employment is conditional on applicants being able to successfully register as an advanced care paramedic with Health Authority Abu Dhabi (HAAD). Minimum requirements: Currently registered as a CCA, NDEMC or BTEMC, Valid ACLS, PALS and PHTLS/ITLS, Previous ALS road experience. Preference will be given to applicants with flight medical, and ICU transfer experience. Salary all in 35,000-00 AED (Approx. R100,000-00 a month) tax free. Accommodation provided on arrival until own accommodation is found. Free medical aid for self and family. Free round trip air tickets annually for self and family."

Source: Facebook, posted on SA Paramedic Vacancy Group, 19 April 2013.

"ALS Critical Care Paramedics required for on road Critical Care Paramedics positions available at Qatar's leading Medical Corporation. We are seeking only the best, most qualified South African talent. Interviews will be done in South Africa. Planned recruitment trip for 26 - 31 January 2014. Excellent international recruitment package offered - 3 YEARS FAMILY CONTRACT (Renewable): Tax free basic salary QAR 30 000 + Family benefits. (which is a basic tax free salary of +/- R84 700.) Qatar's leading medical services organisation, offers you an exciting opportunity to be a part of a dedicated and enthusiastic team of healthcare professionals consisting of 70 different nationalities working together for the single purpose of improving the quality of human

life. A comprehensive benefits program is offered that meets individual needs and those of your families. The Medical Corporation also makes a commitment to help develop your career and make your time with them a positive one. South African NDEMC and BTEMC Paramedics required for positions available at Qatar's leading Medical Corporation.”

Source: Facebook, posted by Global Medical Recruiting, 02 January 2014.

“Critical Care Paramedic positions available in Doha, Qatar. HMC delegates will be visiting the EMS World Expo in Nashville - Nov 2014. All interested paramedics requested to submit CVs Asap to: admin@gmrecruiting.com. Requirements: NREMTP + CCEMTP / Flight / CCP certification. 2 years post qualifications experience on level of CCP. Contracts include: Salary: QR 30 000pm Tax free (US\$8238,13 per month) + free housing, free annual return flights, medical cover + schooling allowances for up to 3 children”.

Source: Facebook, posted by Global Medical Recruiting, 22 September 2014.

Such offers are extremely tempting and it is little wonder that SA trained ALS practitioners are leaving the country to explore better opportunities abroad. It is therefore imperative that strategies are put in place that will motivate them to stay in SA. The following section explores the shortage of ALS practitioners.

1.1.4 Shortage of ALS practitioners

The lack of ALS practitioners impedes the delivery of a holistic healthcare system in SA. The shortage of ALS practitioners is not unique to SA, but reflects a worldwide phenomenon.(41, 42) The local ALS practitioner shortage can be attributed to a lack of access to training facilities, migration, emigration, a lack of available government vacancies, ALS practitioners retiring and practitioners changing profession.(43)

The advent of democracy in SA in 1994 set in motion remedies to correct disparities in healthcare.(44) Resources were redistributed under The National Healthcare Plan which aimed to redress the public healthcare sector.(44) Resources, including ALS practitioners were reallocated to previously disadvantaged areas. However, the number of ALS practitioner training institutions did not increase and this further shrunk the pool of these practitioners.

The lack of experienced ALS tutors in the field has also contributed to this shortage.(12, 45) The lack of these educators has had a negative impact on the quality and numbers of ALS graduates.(46, 47) New ALS graduates may also encounter challenges due to the lack of ALS practitioners to mentor them through the induction phase of their practice.(40)

ALS practitioners have left SA and the profession in pursuit of careers in other vocational fields both nationally and abroad.(48) Commonly cited reasons for exiting the EMS industry include: increased workloads, poor work conditions, poor salary structures, lack of career advancement opportunities, lack of teaching and learning opportunities and unskilled EMS managers.(39)

Current training and development programmes fail to address the lack of ALS practitioners.(3) An insufficient number of ALS training institutions in the country has challenged the number of practitioners available for recruitment by the EMS industry. In 2007, the public EMS sector estimated that it required 3 256 ALS practitioners to ensure optimum EMS operations in the country.(49) By 2010, there were only 311 ALS practitioners employed in the public EMS sector. By 2014, 1 889 ALS practitioners were registered with the HPCSA: PBEC.(50) The shortage of ALS practitioners persists.

ALS practitioner shortages have compromised the delivery of a holistic healthcare system.(42, 51) Critical patients have been deprived of appropriate ALS treatment in the prehospital environment.(3) ALS practitioner shortages also set in motion a chain of reactions. Smaller numbers of ALS practitioners result in increased workloads for the remaining practitioners. However, the persistent challenges of increased workloads overwhelm the available ALS practitioners. These practitioners then become prone to stress and are demotivated. This then has a negative impact on their work performance.(52, 53) Furthermore, the increased workloads together with poor working conditions and high stress levels have contributed to early burnout syndrome and the concomitant result of increased migration levels of practitioners.(1, 52)

Owing to a lack of ALS practitioners, critical patients are treated by lower qualified practitioners. In certain instances, these practitioners function beyond their scope of practice, thereby endangering patients' lives.(54)

Certain EMS organisations in the country have adjusted their operational hours based on the availability of ALS practitioners. Full ALS services may only be available during office hours. The same ALS practitioner is then placed on standby after hours. Since many

ALS operations are urban based, it is the rural communities that are most affected by the lack of ALS practitioners.(55)

The international shortage of staff also affects other healthcare disciplines. In 2006, the World Health Organisation (WHO) estimated that an additional four million HCWs were required internationally to meet shortfalls.(56) It was further reported that 57 countries were experiencing critical shortages and 36 of these countries were in sub-Saharan Africa.

1.1.5 Constraints in the SA healthcare system

It is clear that the country's healthcare system is overwhelmed by the increased demand.(57, 58) The lack of HCWs increases the demand on the limited available resources.(59) These constraints highlight the plight of the SA healthcare system.

SA has a two-tiered healthcare system *viz.* the private and public sector. These sectors are based on the socio-economic status of its users.(60) Approximately 20% of the country's population has access to private healthcare and the remaining 80% are dependent on public healthcare.(5) Eleven percent of the government's budget is allocated for healthcare (61, 62) and 8.5% of its gross domestic product (GDP) is spent on health.(5) But despite this investment, the country's EMS sector is unable to attract, retain and motivate ALS practitioners.

Although there have been huge strides to correct the inadequacies created by the apartheid government,(44) effective strategies to address human resource for health targets have not been reached. This is most apparent in the rural communities of SA. Changes in the disease profile, inequitable health resources and the lack of proper infrastructure has increased the demand for health services.(63, 64)

When compared to countries with similar GDP expenses on health, such as Sweden, SA's performance in terms of health outcomes is extremely poor with higher infant and maternal mortality.(65, 66) SA, like many African countries, has been plagued by a lack of HCWs needed to deliver essential health services.(64) The country's skills shortage is attributed to inadequate health training facilities, increased migration of HCWs and demographic imbalances.(67) Professions affected the most include: medical doctors, specialised nurses, pharmacists, physiotherapists and ALS practitioners.(68) However, despite this shortage of HCWs, the demand for healthcare in the country is on the increase.(68)

According to the Department of Health (DoH), 150 509 health professionals were registered with the HPCSA in 2010.(69, 70) Further, the HPCSA reported that there were 43 664 EMC professionals registered with the PBEC in 2011.(69) This reflects a decrease of 11 009 as compared to 2010.(69) In 2007/8 it was found that SA had a shortage of 79 791 HCWs.(70) This was attributed to limited resources, poor work environments, inadequate salaries, political tension, lack of security, high HIV/AIDS, poor education and a crumbling social system.(71) The DoH acknowledged that there has been a stagnation in the growth of health professionals in SA from 1996-2008.(65) The reasons for the lack of growth in professionals in the public sector is multifaceted. Poor recruitment processes and the lack of publicly funded posts failed to attract health professionals to the public sector.(5) In addition, the lack of opportunity for growth in the public sector has increased the rate of attrition.(5)

The DoH claimed that the attrition rate of HCWs is estimated at 25% per annum.(5) A further 6% attrition was attributed to death, retirement and change in profession of HCWs. Shortages in specialist nurses, especially emergency nurses, are due to migration.(54) This creates a huge void in trauma and emergency care in SA. Urban ECs are being staffed with junior and sessional doctors, and rural areas are being staffed by part time general practitioners.(54) The medical teams are further placed under extreme pressure due to high workloads. These junior doctors are forced to perform emergency procedures for which they are not adequately trained/prepared.(54) The DoH reported a greater ratio of HCWs per patient in the urban and private sectors as compared to rural and public sectors.(65) With the aid of the National Health Insurance, the DoH aims to address SA HCW maldistribution within the country.(5) The shortage of prehospital ALS practitioners is also hampered by requests for ALS practitioners to practice in ECs of many hospitals in SA.(72-74).

1.1.6 South Africa's quadruple burden of disease

SA faces a quadruple burden of disease that include four major categories of death based on their causes.(75) Group I includes all communicable disease, Group II involves non-communicable diseases (NCD), Group III covers deaths related to injury and Group IV includes HIV/AIDS.

Group I accounts for 21.7% of all deaths. These deaths are associated with communicable diseases which are prevalent in underdeveloped and poverty-riddled countries. This group is related to Millennium Development Goals (MDGs) 4, 5 and 6.

These MDGs are aimed at reducing mortality in children less than five years of age, reducing maternal mortality and combating HIV/AIDS, malaria and other diseases. SA has shown little progress in achieving MDGs 4, 5 and 6.(64) Goal 4, to reduce mortality of children less than five years of age (target two-thirds reduction 1990-2015) showed a reversal of progress by 2005. However, projections show that SA will achieve the target of less than 20 under-five child deaths per 1 000 live births by 2015.(76) Goal 5, to improve maternal health (target three-quarters per 100 000 livebirths 1990-2015) showed no progress by 2005. Based on 2010 estimates of 269 maternal deaths per 100 000 live births, SA will not meet its MDG target of less than 38 maternal deaths per 100 000 live births by 2015.(76) Goal 6, to combat HIV/AIDS, malaria and other diseases showed insufficient progress by 2005. However, recent reports show that the prevalence of HIV among the age group 15–24 years, has shown a decrease of approximately 10%.(76) Furthermore, mortality from communicable diseases was 983 per 100 000 SA population in 2008.(77)

Group II contributes 33% of the burden of disease.(75) The World Health Statistics of 2013 showed an increase to 635 per 100 000 deaths due to NCD in 2008.(77) Of this, 307 per 100 000 population (ages 30-70) were due to cardiovascular disease and diabetes. A further 68 per 10 000 population were due to chronic respiratory conditions.(77)

Group III accounts for 14.3% of deaths. These deaths are due to injury. Injury rates in SA for the year 2000 were excessively high.(78) Interpersonal violence caused around one million (6.5% of all) disability-adjusted life years (DALYs). This was followed by road traffic injuries, which were responsible for almost half a million (3.0% of all) DALYs.(79) Combined, intentional and unintentional injuries were the second leading cause of all DALYs, after HIV/AIDS, accounting for 14.3% of the total 16.2 million DALYs.(78) Death from injuries in SA rose to 72 per 100 000 population in 2008.(77)

The heavy burden of HIV/AIDS on the SA society allows this epidemic to be grouped separately into Group IV (30.9%). In 2001, AIDS or AIDS-related diseases were estimated to account for 33% of all deaths in SA.(80) Approximately five million of the 40 million people infected worldwide, live in SA.(62) HIV/AIDS accounts for 31% of the total DALYs in SA.(44) Various AIDS related diseases also fall into this group.

The burden of tuberculosis (TB) is enormous due to its relationship with HIV/AIDS and the emergence of multi-drug resistant strains. TB has been the leading cause of death in the country since 1997. In 2008, Statistics South Africa reported that TB accounted for over 12.6% of deaths in the country.(81) Influenza and pneumonia were the second

leading causes of death (7.7%), followed by intestinal infectious diseases (6.6%), other forms of heart disease (4.4%), cerebrovascular diseases (4.1%), diabetes mellitus (3.3%) and chronic lower respiratory diseases (2.4%). These are followed by HIV (2.5%) and certain disorders involving the immune mechanism (2.5%) as the leading causes of natural death in SA.(81)

In light of SA's quadruple burden of disease, it is clear that the country requires, among other things, a proficient healthcare system with a skilled workforce to minimise mortality and morbidity.

1.2 Rationale for the study

This study was conceived to undertake a comprehensive investigation into the recruitment, retention and motivation of ALS practitioners. The study further aimed to make recommendations to attract, retain and motivate these practitioners. Generally, research in the SA prehospital environment has been negligible. Furthermore, very little empirical work has been done in this field of research. There has also been very little written internationally on this topic. The literature review to date indicates that this study is original. It was envisaged that the quantitative and qualitative inquiry would result in recommendations to curtail ALS practitioner attrition and turnover rates. Most importantly, the study would enable managers to make sound decisions related to ALS practitioner recruitment, retention and motivation.

Although some empirical evidence exists on HCWs, the EMS field in which ALS is practiced is unique in various aspects. The operational areas in which they function may be unstable or hostile. Medical rescues are generally conducted in dangerous environmental conditions.(82) These practitioners are often the first to respond to emergencies. They are also directly exposed to the poor socio-economic conditions of communities, with rapid response driving and medivacs. These conditions create multiple stressors on the practitioner.

Given the contributions ALS practitioners make to the healthcare system, it is crucial to understand the factors and strategies that will enhance their recruitment, retention and motivation. Findings from this study will also shed light on challenges faced in allied fields and enable other disciplines to learn more regarding recruitment, retention and motivation of skilled healthcare professionals.

The inherent shortage of skilled ALS practitioners has considerable implications for the delivery of an effective healthcare system. Despite the annual supply of ALS

practitioners to the SA healthcare sector, a shortage continues to prevail in the EMS industry. The lack of any prior comprehensive formal research inquiry on this topic has led to persisting unanswered questions regarding the research problem. This has a serious impact for the ALS practitioner population in SA, and may become difficult to manage if the problem is left unaddressed.

There is a lack of a registry to regulate and track the movement of ALS practitioners. It has created challenges in determining the number of ALS practitioners actively practicing in SA. Furthermore, this impacts on formulating a clear understanding of the supply and demand trends in the EMS sector.

Knowledge gained through this research study may be transferable to other international EMS systems. The literature highlights that the recruitment, retention and motivation of ALS practitioners is not unique to SA, but represents an international phenomenon. Additional information gathered through this inquiry may also form a platform to inform further research in this and related fields. Policy makers may be guided by the recruitment, retention and motivation information provided from this research study.

1.3 Problem statement

The persistent shortage of ALS practitioners in SA challenges the pursuit for effective delivery of prehospital EMC. The global demand for SA trained ALS practitioners is increasing. Thus, the SA EMS industry is struggling to compete with the international market. Presently, there is a lack of effective approaches to attract, retain and motivate ALS practitioners within the SA EMS industry.

In the absence of effective recruitment, retention and motivation strategies, the problem will continue to escalate. This study makes salient recommendations on the recruitment, retention and motivation strategies specifically for SA ALS practitioners. It is anticipated that these recommendations, once adopted by EMS organisations, will enhance the stability and the retention of ALS practitioners.

1.4 Research question

The following research question was conceptualised from the research problem:

What recruitment, retention and motivation strategies, if adopted by the SA EMS industry, will attract, retain and motivate ALS practitioners?

1.5 Aim of the study

The study aimed to investigate SA qualified ALS practitioner recruitment, retention and motivation factors. Furthermore, the study intended to make recommendations to improve the attraction, retention and motivation of ALS practitioners.

1.6 Objectives of the study

The objectives of this study were:

- To explore the factors that influence the recruitment of ALS practitioners to SA EMS organisations;
- To investigate the factors that affect the retention of ALS practitioners and thus decrease the attrition rate;
- To identify factors that motivate SA ALS practitioners, and
- To make recommendations that will improve the recruitment, retention and motivation of ALS practitioners in SA.

1.7 Layout of thesis

This thesis is presented in eight chapters. A brief summary of these chapters is provided.

Chapter one of this thesis presented an introduction to the study and highlighted the background to the problem. In addition, the chapter outlined the rationale of the study, including its aims and objectives.

Chapter two presents the frameworks which underpin this study, highlighting four theoretical frameworks. The conceptual framework serves to demystify the strategies which are required to improve ALS practitioner recruitment, retention and motivation.

Chapter three provides an overview of the literature on ALS practitioner recruitment, retention and motivation. This literature review provides a holistic perspective on the factors affecting recruitment, retention and motivation.

Chapter four outlines the research design of this study, highlighting the materials and methods that were utilised. It includes information regarding the study population, data collection and data analysis. Additional issues pertaining to the validity and reliability of the study and its ethical considerations are presented.

Chapter five describes the quantitative data collected from the two groups of participants in the first phase of the study. The data is presented in various tables and graphs.

Chapter six presents the qualitative data collected during the second phase of the study. Categories related to ALS practitioner recruitment, retention and motivation are presented.

Chapter seven, the discussion chapter, is presented with an integration of the literature, frameworks, quantitative and qualitative data.

Chapter eight is the concluding chapter of this thesis and presents the conclusions and recommendations for further research.

1.8 Conclusion

Chapter one explored the background for this study and highlighted its objectives. It was noted that an increased demand for SA ALS practitioners exists internationally with an insufficient supply. Effective recruitment, retention and motivation strategies must be instituted by all stakeholders in SA to address this problem. If left unabated, the crisis will impact critically on service delivery to those at the forefront of EMC. The international community also has a role to play in the global shortage of skilled practitioners. Countries must train their own practitioners in order to ensure that the supply of ALS practitioners meet their demand. Chapter two will review the theories underpinning the study.

Chapter Two: Frameworks underpinning the thesis aim

2.1 Introduction

This study was guided by both theoretical and conceptual frameworks. These frameworks form a basis from which ALS practitioner recruitment, retention and motivation is explained, explored and understood in the thesis. The frameworks selected and presented in this chapter are aligned with the research objectives of the study.

2.2 Theoretical frameworks

The theories which underpin this thesis, include Maslow's hierarchy of needs theory,(83) Herzberg's two-factor theory,(84) Vogt *et al.*'s theory on nurse retention(85) and Lewin's force-field analysis theory.(86) These theories are interconnected and relate to the ALS practitioner's work environment, employment package and professional development. Maslow's hierarchy of needs theory explores human needs and relates them to motivation of employees. Herzberg's two-factor theory builds on Maslow's theory and identifies two paradigms of intrinsic and extrinsic motivation. Vogt *et al.*, add value to the human motivation theory by relating it to retention, while Lewin's theory explores organisational driving and retaining forces in the work environment. These theories are detailed below.

2.2.1 Maslow's hierarchy of needs theory

Abraham Maslow, in his quest to understand the link between human beings and motivation, designed the hierarchy of needs.(83) In his 1954 book titled 'Motivation and Personality', Maslow described five categories of human needs (Figure 2.1).(83) Maslow based his theory in accordance with the development of a human being. According to this theory, the needs, wants and desires of human beings change and grow as they develop. Furthermore, these needs become more complex as one progresses up the pyramid.(87) Thus, the most basic physiological needs must be satisfied before the individual can progress in development. Once a need has been satisfied, it is no longer a motivator.(88)

Maslow, however fails to recognize that human beings develop independently and therefore may be at different levels of the hierarchy at the same time(89). Further, employees may be influenced negatively by other employee's experiences.(90) The theory was also unsuccessful in recognizing that individuals may regress down the

hierarchy to previously satisfied levels based on impediments. Maslow's theory was also criticised for the methodology utilized.(91) The qualitative method of biographical analysis of 18 highly influential White males (such as Abraham Lincoln, Thomas Jefferson, William James, Aldous Huxley and Albert Einstein) was considered subjective and biased.

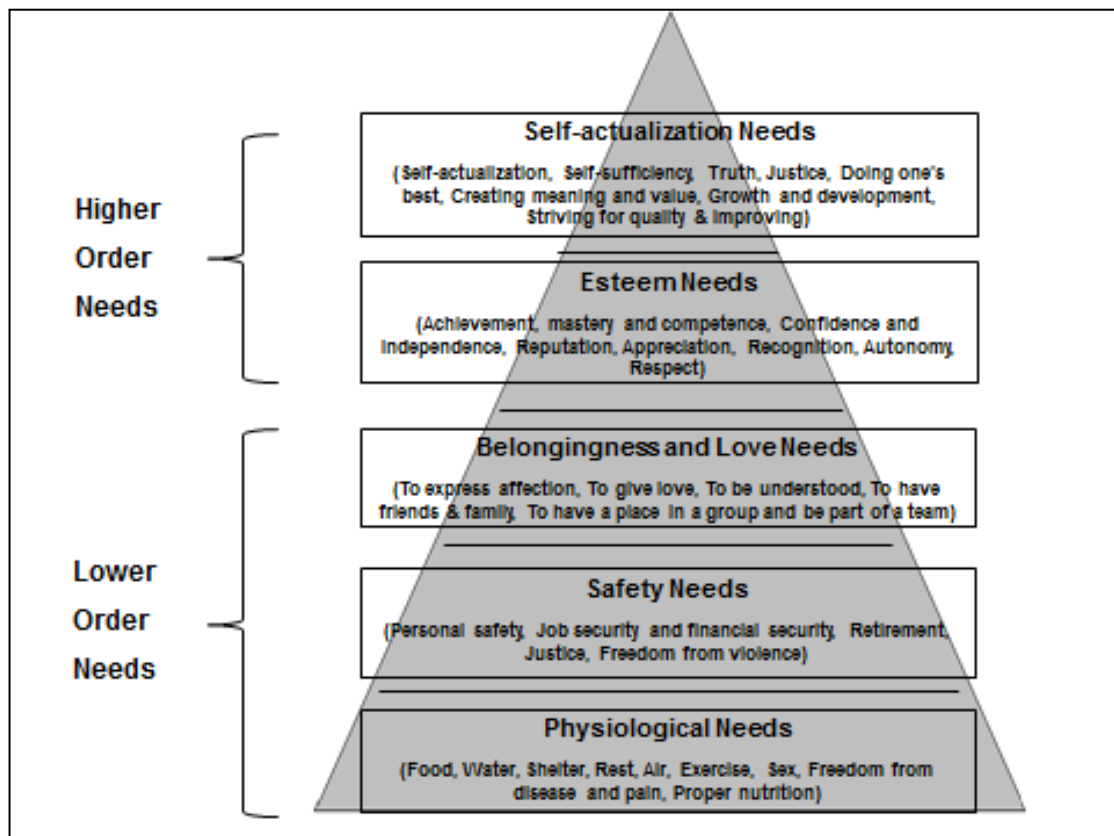


Figure 2.1: Maslow's hierarchy of needs theory

Source: adapted from Nel(92)

2.2.1.1 Maslow's hierarchy of needs in relation to the study

Physiological needs form the base or first tier of the pyramid. Maslow, through his studies with monkeys, realised that the human being is complex and that certain essential physiological needs have to be met to sustain life.(89) These include food, water, shelter, rest, exercise, sex, and freedom from disease and pain. According to this theory an individual can only move to a higher order need once their physiological needs are satisfied.

ALS practitioners work extended hours with inadequate rest periods.(3) They are obligated to work extended shifts (twelve hours) as well as mandatory overtime to supplement their earnings. This is compounded by staff shortages, increased workloads and being on standby. The lengthy work hours have a negative impact on the practitioner's social life. A lack of time to exercise predisposes the practitioner to certain diseases. Work stressors may escalate and lead to post traumatic stress disorder, preventing the practitioner from progressing to the next level of need.(93) Practitioners may regress down the hierarchy if such factors are not addressed appropriately.

Safety needs form the second tier of the hierarchy of needs. These encompass personal safety, job security, financial security, retirement, justice and freedom from violence.(94) The need to feel secure throughout life is psychologically driven. Moreover, living in a secure and non-threatening environment is essential to maintaining a good quality of life. Financial security for the present and the future is also a significant factor in a person's wellbeing.

The personal safety of ALS practitioners is continuously strained at work and in the home environment.(95) ALS practitioners are continuously placed at risk when driving to an emergency.(96) Furthermore, the practitioner is exposed to critical patients with infectious diseases.(97, 98) These practitioners also respond to victims of violence and gang warfare without the appropriate safety backup. Such continuous exposure to dangerous situations impacts negatively on practitioner retention.(99) Ongoing exposure to rampant criminal activities often impacts negatively on the practitioner's motivation levels; it prevents them from progressing up Maslow's hierarchy of needs.(100) Job insecurity creates financial instability and impacts negatively on the ALS practitioner's ability to be motivated leading to poor retention within the SA EMS industry.(101, 102)

Belonging and love needs form the third tier and serve to complete the lower order needs. The need to express affection, to belong to a team and be surrounded by warm and loving family and friends are essential components of belonging needs.(103) Maslow highlights that in the individual's quest for self-actualisation, the first three tier needs (physiological, security and belonging) must be satisfied prior to progressing to the higher order needs.(104, 105) ALS practitioners need to feel loved by their families, have friends and belong to various social groups. The extensive work hours of the ALS practitioner are damaging to their social life. This can lead to demotivation and poor work performance. Collegial interaction and the desire to be accepted as part of a team is important in the work environment.(106)

Esteem needs make up the fourth tier within the hierarchy of needs.(107) These include aspects of achievement, mastery and competence, confidence, independence, reputation, appreciation, recognition, autonomy and respect. Once the lower order needs have been met, higher order needs come into play. ALS practitioners need to feel they've earned the respect of their colleagues and that they've received the recognition of their managers. For their efforts, they are rewarded with respect, autonomy, appreciation and promotion.(108)

Self-actualisation needs are at the apex of the pyramid.(107) This higher order need includes self-actualisation, self-sufficiency, truth, justice, growth and development and striving for quality and excellence. Maslow recognized 15 characteristics which a person who achieves self-actualisation exhibits. They;

- Can recognize reality competently and can endure uncertainty;
- Are more tolerant of themselves and others;
- Are spontaneous in thought and action;
- Are problem-centered instead of being self-centered;
- Have unique sense of humor;
- Are able to look at life empirically;
- Are very creative in their thoughts and actions;
- Are always resistant to enculturation, but not eccentric;
- Have an overwhelming worry for the welfare of humanity at large;
- Are shown appreciation for basic life-experiences;
- Are capable of establishing fulfilling interpersonal relationships with a few people;
- Have ultimate experiences;
- Have a great need for privacy;
- Are renowned for their independent attitudes;
- Have robust moral/ethical standards.

The theory posits that there should be no deficit once an individual reaches the self-actualisation tier.(107) This indicates an absence of obstacles that would otherwise prevent the individual from excelling in their chosen path, and thus allows the individual

to develop to their full potential. EMS organisations in SA must be encouraged to create avenues for ALS practitioner growth.

2.2.2 Herzberg's two-factor theory

Herzberg, in 1959, constructed a two-dimensional paradigm of factors affecting peoples' attitudes about work.(84) This was similar to Maslow's hierarchy of needs. However, the two-factor theory described factors such as organisational policy, supervision, interpersonal relations, working conditions and compensation as hygiene (extrinsic) factors rather than motivators.(109) According to the theory, the absence of hygiene factors can create job dissatisfaction, but their presence does not motivate or create satisfaction. Herzberg found five factors in particular that were strong determinants of job satisfaction (intrinsic). These included: achievement, recognition, level of responsibility, need for personal growth and advancement.(110) These motivators (satisfaction) were associated with long-term positive effects in job performance. The hygiene factors (dissatisfaction) consistently produced only short-term changes in job attitudes and performance, which quickly fell back to its previous level.(84) The theory suggests that satisfaction and dissatisfaction are independent phenomena. However, employers must address both sets of characteristics in order to improve an employee's performance.(110)

Researchers interagating Herzberg's theory identified that the theory was isolated to the critical incident methodology.(111) Additionally, the researchers claimed that this theory confused agents causing events to occur with the participants feelings of satisfaction and dissatisfaction.(112) Further, the theory was criticized as sources of satisfaction and dissatisfaction overlapped each other, the reliability of the data may have been negatively impacted by ego-defensiveness and individual differences among employees were not considered.(113)

2.2.2.1 Herzberg's two-factor theory in relation to the study

Extrinsic factors identified by Herzberg contribute to the ALS practitioner's dissatisfaction and relates to their work environment. EMS organisations are dependent on effective organisational policy and procedures to ensure efficient business practices. EMS managers are tasked with facilitating the adoption of these organisational policies. However, poorly equipped managers lack the appropriate skills to translate these

policies into effective practices. Improved organisational working conditions are important for efficient operations within the EMS health sector. Practitioners may also become dissatisfied with poor interpersonal relations among their colleagues and managers. The intrinsic factors of satisfaction portrayed by Herzberg relate to the practitioner's professional development. Achievement, recognition, level of responsibility, need for personal growth and advancement are essential to the ALS practitioner's personal growth.

2.2.3 Vogt *et al.*'s cork-top (Bottleneck) theory of nurse retention

In 1983, Vogt, Thames, Velthouse and Cox's cork-top theory on nurse retention built on Maslow's hierarchy of needs theory.(85) Maslow's hierarchy fixated on motivation but Vogt *et al.*'s. theory concentrated on nurse retention.(114) Although Vogt *et al.*'s. theory focused on nurse retention, it can also be applied to ALS practitioners as the environments in which they function and the types of patients they treat are comparable.

In their five tier theory, which has been assembled in a "cork-top" shape, Vogt *et al.* believe that motivation and retention are distinctively separate processes.(85) Although they are managerial functions, the planning, organising and implementation strategies are completely different. In contrast to Maslow's hierarchy of needs theory, which is arranged in a pyramid shape, the Vogt *et al.* theory has a classical "cork-top" shape with narrow and wide areas. The understanding is based on the principle that the wide areas will allow for abundant flow and the narrow areas will restrict flow when limitations are encountered (Figure 2.2).

In their 1983 book titled "Retaining Professional Registered Nurses" Vogt *et al.* aimed at highlighting the problems related to nurse retention.(85) However, despite the global shortage of HCWs, the theory is not widely utilized. The theory proposed that employers identify bottleneck areas early as they prevent nurse retention. The theory further suggested that nurses should be assisted by managers to identify factors that impede them achieving their needs.

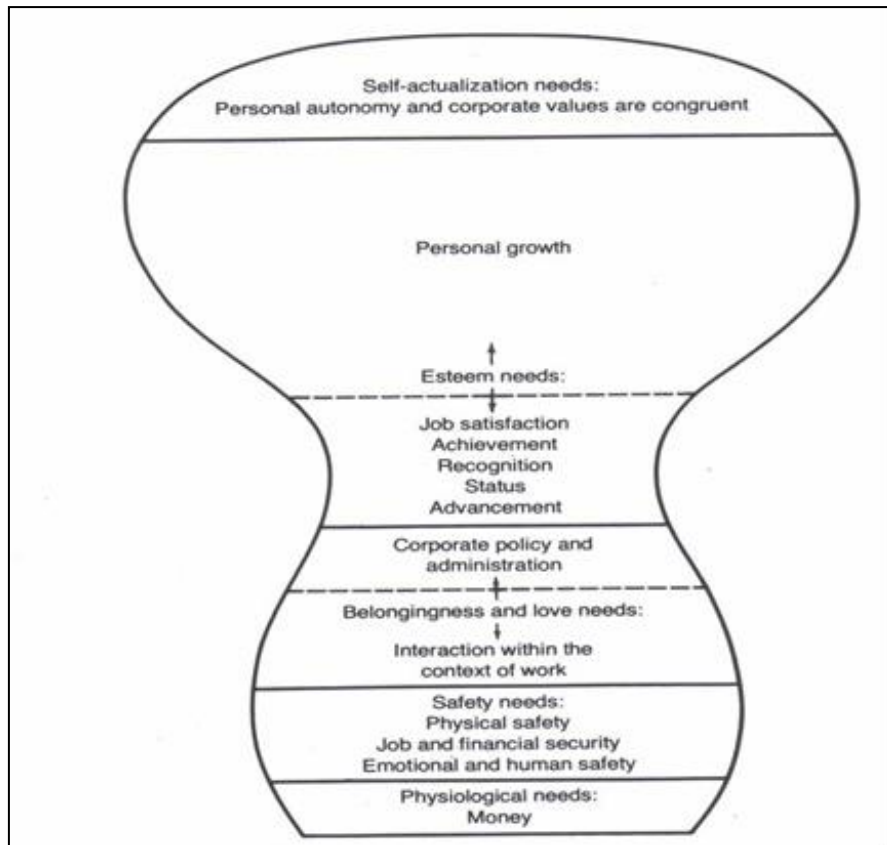


Figure 2.2: Vogt *et al.*'s cork-top (Bottleneck) theory (85)

2.2.3.1 Vogt *et al.*'s theory in relation to the study

The bottom tier of the Vogt *et al.* theory is comprised of **physiological needs**. According to this theory, money is the fundamental need at this level.(85) This area indicates that money is important in meeting physiological needs and that salaries earned should be sufficient to ensure that these needs are met.(88) Similar to Maslow's hierarchy of needs, the Vogt *et al.* theory considers physiological needs as the first step to employee retention. Therefore, financial incentives are considered essential to attracting and retaining high quality, skilled employees.

Akin to Maslow's hierarchy of needs, **safety needs** encompass the second tier of the Vogt *et al.* theory. According to the theory, this tier includes physical safety, job and financial security and emotional and human safety.(114) Safety needs are situated in a widening portion of the "cork-top". This denotes that safety needs are easily achieved in the profession.(115) However, this is not the case for ALS practitioners. They are constantly exposed to danger in all aspects of their operations. Owing to this and its related negative impact, practitioners are pushed away from the SA EMS industry.

Belongingness and love needs is the third tier of the Vogt *et al.* theory. It is situated within a narrowing of the “cork-top”.(85) This tier indicates that employees need interaction with colleagues and managers in the workplace. Furthermore, teamwork and a positive work environment contributes to employee retention.(88) This is equally important for ALS practitioners. Organisational policies and administration guidelines must be in place to assist employees in interacting with the organisation. Non-existent, or inadequate policies governing organisational practices may be constrictive and deter employee retention.(114)

Esteem needs form the fourth tier of the theory. Aspects of esteem needs include job satisfaction, achievement, recognition, status and advancement and are situated within a narrowing of the “cork-top”.(85) This indicates that these needs are sensitive and if not identified and acted upon favourably by management, it may impede staff retention.(114) Broader parts of esteem needs are situated on the widened portion of the “cork-top” and concentrate on employees’ personal growth. According to the theory, managers must recognise and foster employee growth in order to encourage retention.(85)

Self-actualisation needs are located at the top of the “cork top” and have a wide, but flat area, which is symbolic of being restrictive. It denotes an area where self-actualisation needs are stifled in the workplace.(114) The lack of recognition by management to realise employees’ needs for personal autonomy will derail any retention strategy. Employees need to align themselves with the organisation’s values and if lost, then retention is impeded.

2.2.4 Lewin’s force-field analysis theory

In 1951, Kurt Lewin designed the force-field analysis theory as a tool to plan and implement change in organisations.(86, 116) However, over the years the use of Lewin’s theory has been diversified and even utilised in the social sciences. According to the theory, managing organisational change is a balancing act of opposing driving and restraining forces (Figure 2.3).(116) Driving forces nurture positivism and motivate employees towards a desired state. Whereas restraining forces oppose these changes and negate growth. Driving and restraining forces are very specific and unique to organisations. According to the theory, driving forces must be identified and strengthened to overcome and remove restraining forces in order to enhance employee retention and motivation.(116)

Lewin's theory was very rational and goal orientated.(117) It did not focus on personal factors that may affect change but rather concentrated on the organisation. The theory was designed on the assumption that organisations operated in a stable state and was only applicable to small organisational projects.(118) Critics claimed that the theory failed to take into consideration an organisations power and internal politics. Further they felt that the theory was management driven with a top-down approach.(119)

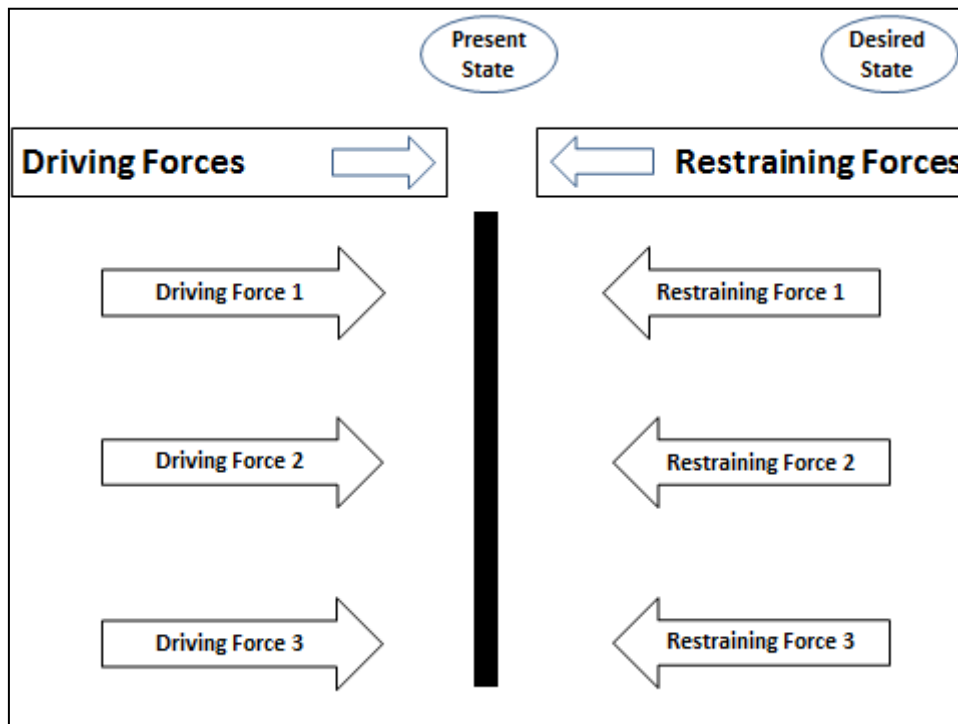


Figure 2.3: Lewin's force-field analysis theory (116)

2.2.4.1 Lewin's force-field analysis theory in relation to the study

According to Lewin's theory, the process of change is comprised of three steps: unfreezing, moving and refreezing.(116) The process of unfreezing involves identifying the problem in its entirety, including its associated factors. Here EMS organisations must dissect factors associated with ALS practitioner recruitment, retention and motivation. A complete segmentation of the problem is advised in order to identify driving and restraining forces.(86) Once the problem has been fully analysed, moving is the process of implementing the changes.(88) This is a very sensitive step in an organisation. The implementation of the changes must be guided by organisational policy and procedures. It is the responsibility of the management team to timeously communicate these changes

to all employees. This prevents any obstructions to the process.(114) The process of refreezing involves practicing the agreed changes.(116) Based on the findings of studies completed on ALS practitioners in the SA context by Govender(48), Binks(120) and Hackland(3), Lewin's force-field analysis theory was adapted to show ALS practitioner recruitment, retention and motivation driving and restraining forces impacting on the SA EMS industry, as detailed in Table 2.1.

Table 2.1: Driving and restraining forces impacting recruitment, retention and motivation

Driving forces	Restraining forces
Market related salaries paid to ALS practitioners with no salary disparities	Low & disparities in salaries
Safe and hygienic workplace	Unsafe & unhygienic working conditions
Appropriately qualified and experienced EMS managers	Unskilled EMS managers Lack of vacancies for ALS practitioner employment
The availability of resources	Inadequate and defective equipment Increased workloads
Teamwork	Lack of teamwork and collegiality
Effective communication with the organisation, management structures and colleagues	Ineffective, unqualified manager
Promotion opportunities	Absence of promotion opportunities
Additional benefits package	Inadequate/ lack of allowances
ALS practitioners being part of the organisation's decision making process	ALS practitioners not consulted on organisational decisions
Job stability	Lack of job stability Poor job recognition
Career development through training and development	Lack of career development opportunities
Employee centred mentorship programmes	Lack of mentorship programmes
Paid time off	Lack of paid time off packages
Promoting a healthy workforce by providing recreational facilities	Lack of recreational facilities at the workplace

Source: adapted from Lewin(116)

2.3 Conceptual framework

The conceptual framework is original (Figure 2.4) and was designed specifically for this study. It is aligned with strategies that encourage ALS practitioner recruitment, retention and motivation. A clear and logical link among these strategies will be provided.

The recruitment, retention and motivation of ALS practitioners is subjected by the external environment, EMS organisation and influences on the the ALS practitioner by

the EMS organisation. The external environment comprises of political, social, technological, ecological, economical and legal factors. This is the first layer of factors which impact on the ALS practitioners. An unstable political climate in the country(4), the absence of effective labour laws and economic instability negatively impact on ALS practitioner recruitment, retention and motivation. The lack of equipment or faulty equipment(3) and degrading social systems may further worsen the retention of ALS practitioners.

The second layer of factors that impact on ALS practitioner recruitment, retention and motivation includes the EMS organisation. These organisations are encouraged to provide an employee-centred environment. Further, the workplace must be safe and managed by skilled managers. Opportunities for job stability, career development and mentorship must be available. The financial package offered to the ALS practitioner must be market related and commensurate of the work being undertaken.

The innermost layer comprises of the ALS practitioner. These practitioners are dependent on professional autonomy and teamwork to encourage retention. They also require employee assistance programmes to guide them after traumatising emergency scenes. ALS practitioners must be part of the organisational decision making process.

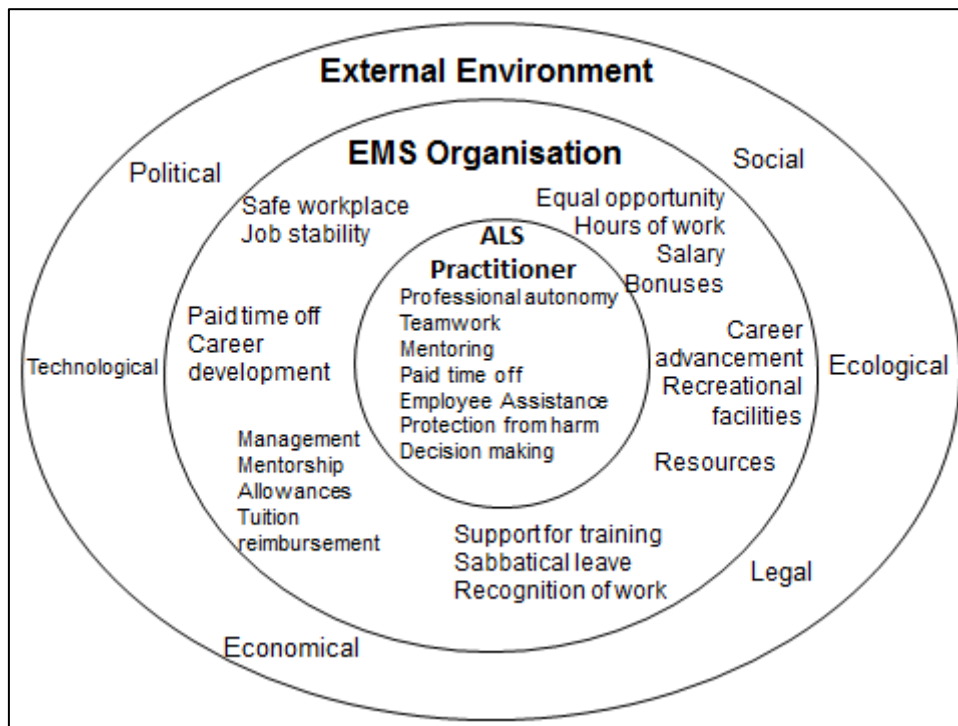


Figure 2.4: Conceptual framework of the study

Factors affecting ALS practitioner recruitment, retention and motivation are not clearly understood. Furthermore, the relationships between these variables are not implicit. Maslow's hierarchy of needs theory supports the fact that ALS practitioners have needs, wants and desires to aspire to self-fulfilment. It posits that lower order needs have to be satisfied prior to the practitioner progressing further up the hierarchy. A failure by EMS managers to identify and successfully address the ALS practitioner's needs may ultimately affect their motivation and retention. The researcher is of the opinion that espousing Maslow's theory in practice in the EMS industry is vital for ALS practitioners.

Herzberg's two-factor theory identified intrinsic and extrinsic factors related to employee motivation. Herzberg highlighted that both sets of factors must be addressed in order to encourage ALS practitioner recruitment, retention and motivation.

The Vogt *et al.* theory is justified as it addresses employee retention and clearly shows that employee motivation and retention are separate entities within an organisation. Strategies addressing motivation and retention problems must therefore be separated. This is based on the premise that a "motivated employee is not necessarily retained" or a "retained employee is not necessarily motivated".

Lewin's force-field analysis theory identified both positive and negative forces within an organisation. It is necessary to identify and move driving forces toward a desired state to enhance change in the practice of ALS practitioner recruitment, retention and motivation.

2.4 Conclusion

The theoretical and the conceptual frameworks relating to ALS practitioner recruitment, retention and motivation were highlighted in this chapter. The four theories chosen above helped steer and guide this study. The theories provided a common thread to understanding ALS practitioner recruitment, retention and motivation problems. It also provided a framework to discuss remediation strategies.

The conceptual framework highlighted the study's research problem. It is evident that this research area is not clearly understood. Findings from this study will aid in understanding the problem further. Recommendations may aid in reducing the problem. Chapter three presents a review of the literature.

Chapter Three: Literature Review

3.1 Introduction

The delivery of an effective healthcare system is labour intensive and is therefore dependent on manpower.(1) Every HCW has a pivotal role to play in the continuum of care in order to achieve and maintain a healthy nation. The role that ALS practitioners play in this continuum has been shown to be effective in reducing morbidity and mortality in certain categories of critical patients.(121) It is thus essential that the SA healthcare sector maintains a sturdy supply of motivated ALS practitioners. In this chapter, the source literature for this study is identified. The ALS practitioner's role in the healthcare sector is explored prior to highlighting their diverse training in SA that increases their international demand. Literature on the factors affecting ALS practitioner recruitment, retention and motivation are then presented.

3.2 Source of literature

In order to identify, retrieve and extract existing knowledge on ALS practitioner recruitment, retention and motivation, literature from various medical, human resources and business publications were reviewed. Sources included the Internet, journals and textbooks. A two step approach was utilized to extrapolate the most relevant literature pertaining to this study. Step one comprised of a hard copy review of journal articles, thesis and dissertations and text books at libraries from the following HEIs: Durban University of Technology (DUT), Management College of Southern Africa (MANCOSA), University of KwaZulu-Natal (UKZN) and the University of Cape Town (UCT). This search yielded minimal information. The second step of the literature review involved electronic searches. Repositories, online journals, academic search engines and Internet sites were explored. All material published later than the year 2000 were reviewed. The repositories of DUT, MANCOSA, UKZN and UCT were also searched. Keywords for the repository search included: recruitment, retention and motivation of paramedics, ALS practitioners and HCWs. These searches yielded 511 items from DUT, 38 from MANCOSA, 1 259 from UKZN and 1 798 from UCT. The titles and abstracts of these items were then analysed utilizing the study objectives. Only 9 items from the DUT search met the study criteria, 2 from MANCOSA, 4 from UKZN and 5 from UCT.

Based on the inadequate data gathered during the hard copy and repository search, a more comprehensive online search was conducted. Boolean terms for the online search

included (in various forms and combinations): “recruitment”, “retention”, “motivation”, “advanced life support”, “paramedic”, “healthcare workers”. The search engines utilised included Google, Google Scholar, ProQuest, PubMed and ScienceDirect. These search engines yield included; Google (524 000), Google scholar (85 800), Proquest (58), Pubmed (26) and Sciencedirect (2 076). The title and abstracts of these items were then analysed utilizing the study objectives. All relevant material was included in the study.

Extensive online journal searches were also found to be information rich viz. African Journal of Emergency Medicine (61), British Medical Journal (85 575), The American Journal of Emergency Medicine (798), Oman Medical Journal (51), Journal of Emergency Medicine (1 033), Annals of Emergency Medicine (98), Prehospital Emergency Care (16 352) and The Lancet (370) were tapped into. The titles and abstracts of these items were then subjected to analysis using the study objectives. Information gathered from these online journal searches are presented below.

Furthermore the following Internet site searches returned valuable information : African Health Workforce Observatory (242), Human Resources for Health (341), Global Health Workforce Alliance (7), Health Systems Trust of South Africa (41), World Health Organisation (193), Regional Network for Equity in Health in Southern Africa (EQUINET) (49), South African Department of Health (73), Statistics South Africa (10), Management Science for Health (7), Health Research Policy and Systems (875), Global Health Council (10) and International Labour Organisation (553). The titles and abstracts of these items were also analysed utilizing the study objectives. These sources provided valuable information on HCW recruitment, retention and motivation.

The following sections highlight the role of the ALS practitioner in EMC with a focus on ALS practitioner training in SA. Further ALS practitioner recruitment, retention and motivation is presented and the factors affecting these variables are highlighted.

3.3. The role of ALS practitioners in EMC

ALS practitioners play an important role in reducing morbidity and mortality in patients with life threatening emergencies. These emergencies include cardiac arrest(122, 123), acute coronary syndrome(124, 125), cardiac arrhythmias(126-129), respiratory emergencies(12, 130), trauma care(121, 131, 132) and pain management.(133) An SA trained ALS practitioner’s knowledge, skills, experience and versatility improves their marketability. It is for these reasons that they are recruited to international EMS systems.

The role that ALS practitioners play in society includes research conducted outside SA and in most instances, outside the African continent. ALS practitioners in SA function within suboptimal systems as they endeavour to meet community needs.(3, 48) The independent ALS practitioner is knowledgeable and has a vast array of clinical skills to treat the critical patient. The skills of all SA trained EMC practitioners are highlighted in Table 3.1 and Annexure A. The scopes of practice of these practitioners are progressive. Practitioners advancing to higher levels of expertise must be competent in the foundational scopes of practice.

3.4 ALS practitioner training in South Africa

The SA EMS industry has questioned the low numbers of ALS practitioners graduating annually. The eight ALS practitioner training institutions in SA are unable to meet the national demand of these practitioners. Moreover, the SA EMS sector is forced to compete with the international market for ALS practitioners. Personnel enter the EMC field through two streams: the short course training route or the HEI training route.(7) Both streams of training have contributed to the pool of ALS practitioners in SA. However, with the growing international demand and the sparse supply of ALS practitioners, has made the number of ALS practitioners in SA vulnerable.

In 2014, there were only seven CCAs, four NDEMCs and three BTEMC HPCSA: PBEC accredited education and training providers in SA (some training institutions offer more than one programme).(134) During the study, the Nelson Mandela Metropolitan University in Port Elizabeth was accredited as an ALS training institution. This institution's first intake was in 2015 and their first ALS graduates are only expected in 2019.

In 2011, after approximately twenty-five years of ALS practitioner training commenced in SA, there were only 1 657 practitioners registered with the HPCSA: PBEC. These included 1 491 CCA and NDEMC graduates registered on the paramedic register and 166 BTEMC graduates registered on the emergency care provider (ECP) register.(69) However, the exact number of ALS practitioners practicing in SA has not yet been determined due to their constant migration and profession changes.

Table 3.1: Emergency medical care qualifications and capabilities in SA

Qualifications	Skills and level of care	Hours of basic training
Basic Ambulance Assistant (BAA)	Graduates provide basic life support skills including; CPR with AED usage, controlling blood loss, immobilisation of the spine and limbs, oxygen therapy with various delivery devices including BVM usage, suctioning of secretions, dislodging of foreign bodies from the airway, administration of medication as per HPCSA: PBEC and obstetric management.	160
Ambulance Emergency Assistant (AEA)	Graduates provide intermediate life support skills including; needle cricothyroidotomy, nebulisation with β_2 agonists, needle thoracentesis, pulse oximetry monitoring, peripheral intravenous cannulation with fluid administration, PASG suit usage, manual defibrillation and administration of medication as per HPCSA: PBEC.	BAA + 470
Emergency Care Technician (ECT)	Graduates provide intermediate and certain advanced life support skills including; supraglottic extraglottic airway device insertion, oro/nasogastric insertion, use of capnography, external jugular vein cannulation, IO insertion, umbilical vein cannulation, IV drug administration, urinary catheterisation and administration of medication as per HPCSA: PBEC.	2400
Critical Care Assistant (CCA)	Graduates provide advanced life support skills including advanced airway management, mechanical ventilation with the use of PEEP, femoral vein cannulation, use of infusion pumps, synchronised cardioversion, transcutaneous cardiac pacing, 12-lead ECG monitoring, management of cardiac arrhythmias, suturing, administration of medication as per HPCSA: PBEC and adult and neonatal intensive care transfers.	AEA + 1200
National Diploma in EMC (NDEMC)	See Critical Care Assistant	3600
Bachelor of Technology in EMC (BTEMC)	See Critical Care Assistant plus rapid sequence intubation and fibrinolysis for STEMI	NDEMC + 2400
Master of Technology in Emergency Medical Care (MTEMC)	Academic full research qualification. No further advancement in scope of practice. Baseline qualification is BTEMC.	3600 (Part Time)
Doctor of Philosophy in Emergency Medical Care	Academic full research qualification. No further advancement in scope of practice. Baseline qualification is BTEMC.	3600 (Part Time)

Source: Pillay(135)

CPR: Cardiopulmonary resuscitation, AED: Automated external defibrillator, BVM: Bag-valve-mask resuscitator, PASG: Pneumatic anti-shock garment, HPCSA: Health Professions Council of South Africa, PBEC: Professional Board for Emergency Care, IO: Intra-osseous, IV: Intravenous, PEEP: Positive end expiratory pressure, ECG: Electrocardiogram, STEMI: ST-segment elevated myocardial infarction.

3.4.1 Short course training of ALS practitioners

Short courses in prehospital EMC were offered in SA in the 1970s. These training programmes, several weeks in duration, were structured to accommodate in-service training. The initial level of training offered was what would later be termed Basic Ambulance Assistant (BAA).(136) As the clinical need arose in the early eighties, BAA practitioners' skills were increased and their scope of practice was broadened. A new Ambulance and Emergency Assistant (AEA) qualification was hence borne. However, the number of critical patients increased and the AEA scope of practice was inadequate to treat these groups of patients. Emergency centre skills were then taught to groups of CCA students. On completion of the six-month short course, these students were able to perform invasive procedures in the prehospital environment as ALS practitioners.

EMC courses registered with the HPCSA: PBEC include: BAA, AEA, CCA, NDEMC, BTEMC, ECT and the Operational Emergency Care Orderly Course (restricted to military personnel). In 2015, there were 28 BAA, 12 AEA, four ECT and only seven ALS EMC training facilities in SA.(134) The paltry number of ALS training facilities in the country is indicative of the shortage of ALS practitioners available in the job market. Figure 3.1 highlights the maldistribution of ALS training facilities in SA. Only four of the country's nine provinces train ALS practitioners.

Anyone interested in joining the profession in SA, and having met the minimum entry requirements, can register with one of the 28 BAA EMC training institutions to complete the programme. Successful candidates then need to complete 1000 supervised, operational hours as a BAA practitioner. During this time, these personnel gain valuable practical exposure to critical patients. These candidates can then register with any of the 12 service providers to complete the AEA programme. Having passed the theoretical and practical entrance examinations, the candidate is admitted into the CCA programme at any of the seven ALS training institutions. In-service BAA and AEA qualified practitioners are also eligible to enter the ALS programmes provided they meet the institution's minimum requirements for registration. Presently, the short course ALS programme (CCA) is twelve-months of intensive EMC training.

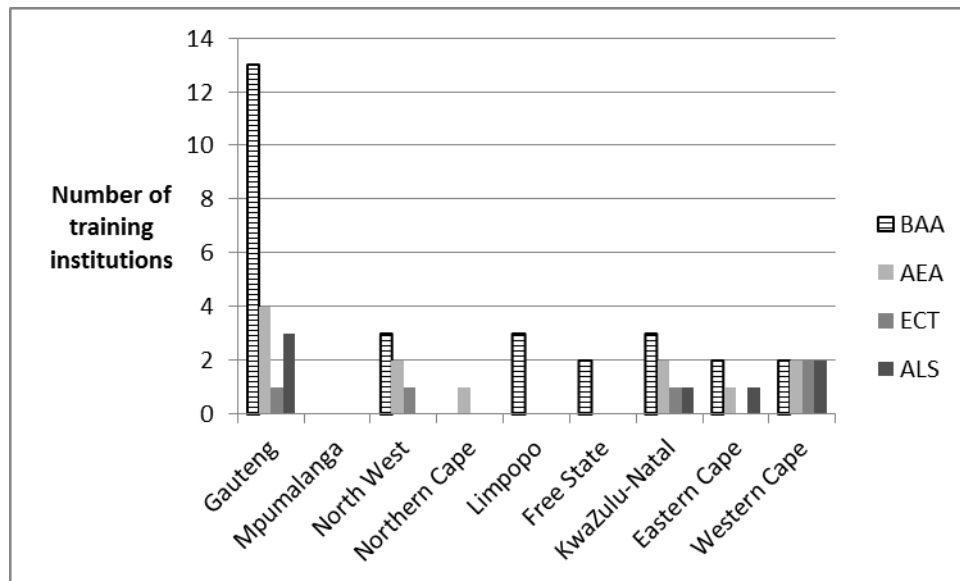


Figure 3.1: Distribution of EMC training institutions in SA in 2015

Source: HPCSA: PBEC(134)

BAA: Basic Ambulance Assistant, AEA: Ambulance and Emergency Assitant, ECT: Emergency Care Technician and ALS: Advanced life support.

CCA candidates are mentored by experienced ALS practitioners, medical doctors and specialists in the respective disciplines when in the clinical setting. These candidates therefore gain a wealth of knowledge and experience in the practical environment. Upon completing a final examination (*viva voce*, objective structured clinical examination, written theory assessment and an individual patient simulation) and registering with the HPCSA: PBEC, they can practice as independent ALS practitioners. Information regarding ALS graduates from the different training programmes is presented in Figure 3.2. The training of ALS practitioners has gradually increased.

The short course system is responsible for training ALS practitioners with a primary focus on EMC. The twelve-month CCA programme is able to produce ALS practitioners in the most expedited timeframe. To compare, the NDEMC and BTEMC programmes are three and four years longer, respectively. Given the inherent shortage of ALS practitioners created by a decrease in supply and increased turnover, a need for strategies to recruit, retain and motivate ALS practitioners becomes more apparent. The following section explores HEI training of ALS practitioners in SA.

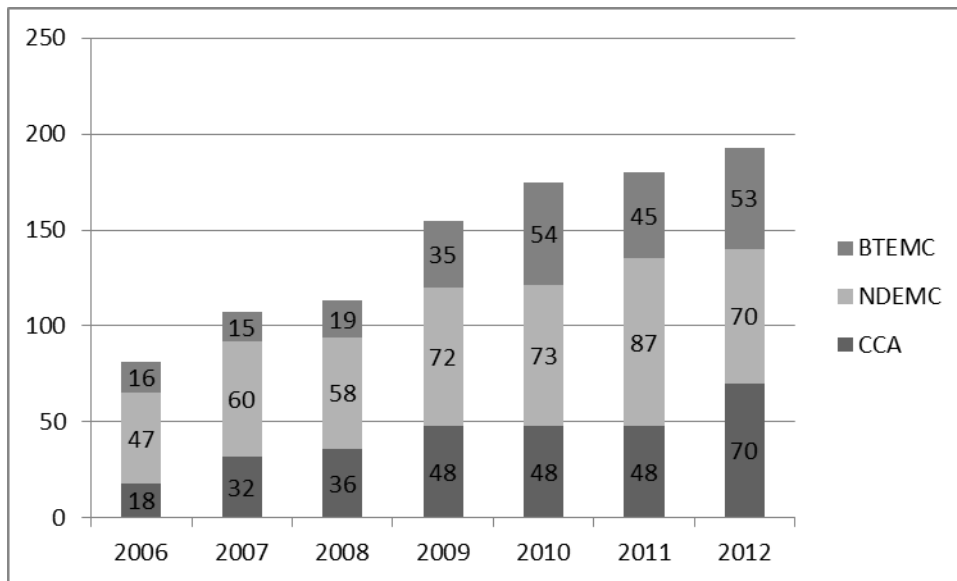


Figure 3.2: Total ALS graduate numbers 2006-2012

BTEMC: Bachelor of Technology in Emergency Medical Care, NDEMC: National Diploma in Emergency Medical Care and CCA: Critical Care Assistant.

Practitioners choose to join the medical profession for various reasons. These choices are influenced by parents, colleagues, coaches, role models or religious leaders. Ross *et al.*(137) aimed to examine the factors that motivate students to study EMC and nursing qualifications in Australia. A cross-sectional survey questionnaire study enrolled 182 participants. The response rate for the study was 93%. The study found that factors such as ‘wanting to help people’, ‘saving lives’ and ‘exciting career’ as motivators for career selection. The study also reported that older students in the study cohort rated ‘employment prospects’, ‘pay rate’ and ‘job security’ higher. Further, male participants considered ‘pay rate’, ‘working environment’ and ‘job security’ more important than their female counterparts. The researchers concluded that job security was a significant motivation factor in attracting practitioners to the profession.

The demand for healthcare is continuously increasing. Miers *et al.*(138) therefore aimed to identify the reasons for nursing students choosing a specific nursing specialism. The researchers also aimed to determine motivation factors for choosing careers between different professions. The prospective survey questionnaire study was completed by 775 first year students completing non-medical health programmes followed by 393 students who were qualifying in the United Kingdom. The study found that altruism was the commonest reason for wanting to join a non-medical profession. Other reasons included personal interest and professional rewards. However, students choosing the nursing

profession were less likely to indicate altruism as a choice for non-medical professions ($p=0.001$). Nurses entering the profession were less likely to cite professional rewards as a motivator for career choices ($p=0.009$). The study concluded that nursing students choose the profession based on their interest and the professional values and rewards it brings.

Further, O'Meara *et al.*(139) aimed to determine the key factors that influence career choices of paramedic and nursing/ paramedic students. The Australian study was longitudinal by design and utilized survey questionnaires and a focus group to gather data. A total of 508 completed survey questionnaires were returned with a response rate of 72%. Factors that identified paramedic career choices included; personal (53%), professional (20%), organisational (8%) and community factors (3%). The study concluded that prospective EMS employers must address attraction factors in order to recruit practitioners.

Additionally, Szarpak *et al.*(140) aimed to determine factors that influenced the career choice of paramedics in Poland. The study recruited 362 paramedics who completed a life orientation survey questionnaire. More than 40% (43%) of the sample was between the ages of 20-29. The study found that paramedics reasons for choosing the profession was vast. The reasons for career choices included; willingness to help (35%), desire to be needed (16%), contingency (11%), the possibility of independent action (10%), innate predispositions (8%), contingency and able to make decisions (6%), other (4%) and family traditions and no other options (2% each) ($p<0.010$). The researchers concluded that the desire to be needed were the most popular reasons practitioners chose to be paramedics.

3.4.2 Higher Education Institution training of ALS practitioners

Four HEIs in SA offer NDEMC programmes. These include the University of Johannesburg (UJ), the Durban University of Technology (DUT), Central University of Technology (CUT) and the Cape Peninsula University of Technology (CPUT). Only three of these HEIs offer the BTEM programme (UJ, DUT, and CPUT). Each of these HEIs have an annual intake of approximately 30 students annually, for each programme. The NDEMC programme is currently being phased out. The four-year professional bachelor's degree has replaced the NDEMC programme.

The persistent shortage of skilled personnel in the healthcare sector promulgated the development of the mid-level worker qualification by the DoH across all medical

professions.(7) The mid-level worker, through a two-year training programme, completes an emergency care technician (ECT) qualification in EMC. The ECT programme is taught at certain provincial COECs, the SAMHS and HEIs in the country.(134) To date, no studies have been completed to determine the impact that the ECT graduates have had in the SA EMS environment. However, bridging programmes have commenced at certain HEIs (UJ) to upskill ECT graduates to the BTEM C.(7)

It is apparent that the four HEIs are unable to meet the ALS training needs of the country. Furthermore, decreases are expected in the ALS practitioner graduation numbers due to the suspension of the NDEMC programmes. The following section discusses the role of the HPCSA: PBEC in EMC training in SA.

3.4.3 Role of the HPCSA: PBEC in EMC in SA

The role of the HPCSA: PBEC in EMC in SA is multifaceted. This council is mandated to determine strategy and control, and to exercise authority over the education, training, registration, ethics and professional standards for practicing EMC professionals registered under the Health Professions Act 61 of 1974.(3) The HPCSA is both the education and training quality assurance and the statutory body responsible for professional registration of healthcare professionals in SA. In response to national imperatives, the HPCSA reviewed the full range of healthcare qualifications and programmes in 2009 with a view of ensuring their compliance with the then latest national requirements. The PBEC in its capacity as the standards governing body (SGB) requested that: (a) as from 2011 all new students at universities must be enrolled for a bachelor's degree (i.e., BTEM C), and (b) the national diploma (i.e., NDEMC) qualification must be phased out by December 2015.(7)

Table 3.2: SA national EMC qualifications 2015

Tier	Name of Qualification	National Qualifications Framework (NQF) Level & Credits	HPCSA Register
1. Entry level qualification	Higher Certificate in Emergency Medical Care	NQF 5 120 credits	Emergency Care Assistant (ECA)
2. Mid-level qualification	Diploma in Emergency Medical Care	NQF 6 240 credits	Emergency Care Technician (ECT)
3. Professional qualification	Professional Bachelor Degree in Emergency Medical Care	NQF 8 480 credits	Emergency Care Practitioner (ECP)

Source: NECET policy(141)

NQF: National Qualification Framework, HPCSA: Health Professions Council of South Africa, ECA: Emergency Care Assistant, ECT: Emergency Care Technician, ECP: Emergency Care Practitioner, NECET: National Emergency Care Education and Training.

The CCA short course is currently under scrutiny by the SGB of the PBEC. For almost three decades, the short course system has provided ALS practitioner graduates to the SA EMS job market. However, the Executive Committee of the HPCSA: PBEC is in the process of closing the BAA, AEA and CCA registers. After closure of these registers, no new short course graduates will be entitled to register with the HPCSA: PBEC and practice in SA. This matter is pending finalisation by the National Minister of Health. When the short courses close, there will only be four HEIs offering ALS training in SA. This means that the annual supply of ALS practitioners will decrease significantly. Additional decreases are expected with the suspension of the NDEMC programme. This will result in an annual decrease of 70 - 75% of ALS practitioners (Figure 3.2).

The HPCSA: PBEC together with the DoH, through the National Emergency Care Education and Training (NECET) policy, aims to align EMC education and training in SA.(141) It is envisaged that the policy, through its framework, will facilitate access to EMC education, improve mobility and progression within EMC education and training, allow for access and career advancement, enhance and maintain the quality of EMC education and training. Table 3.2 highlights the proposed EMC qualification framework.

3.5 Recruitment, retention and motivation of ALS practitioners

3.5.1 Recruitment of ALS practitioners

Recruitment is a process by which the need for a certain position to be filled is identified. The process then involves attracting and hiring the best qualified candidate, either from within or outside the organisation. This process must be conducted in the most timely and cost effective manner.(142) Recruitment influences employee retention and motivation and therefore must be completed effectively.(143) Organisations must be cautious as recruiting new employees is not a process of “filling in gaps”, but an opportunity to conquer new frontiers with skilled and experienced ALS practitioners.(144) Recruitment, however, is influenced by various internal and external factors. Internal factors include: organisational recruitment policy, human resource planning, size of the organisation, cost of recruitment and growth and expansion. External factors include: supply and demand, labour markets, the organisation’s image, unemployment rates, competitors and trade unions.(142)

The recruitment process must be aligned to the organisation’s mission, vision and human resource plans. The organisation has to offer the prospective ALS practitioner a comprehensive employment package in order to improve attractiveness (Table 3.3).(145) This is essential as employees also seek this essential information during the recruitment process. The lack of a holistic employment package with career development opportunities may not attract ALS practitioners to the organisation.

The inherent shortage of ALS practitioners in SA is multi-faceted and challenges effective recruitment drives. As highlighted in previous sections, a drastic decrease is expected in the annual supply of ALS practitioners in SA. Further, this supply does not meet the national demand. These practitioners are absorbed within the national structures and by numerous international recruitment agencies. However, the high turnover, mal-distribution, inadequate training facilities, freezing of posts and migration of ALS practitioners has created a turbulent market for their recruitment.(146) Further, the rampant rise of HIV/AIDS infected patients in SA has negatively impacted the healthcare system and availability of skilled HCWs. Many HCWs have become infected, thus compromising the delivery of healthcare in the country.(147) Decreased numbers of HCWs in SA has put an extra burden on the existing workforce. As a result, these HCWs become overwhelmed and depressed, further encouraging migration.(146) In 2004, one third of all SA public healthcare posts remained vacant.(148)

Employer branding is a set of intangible attributes and qualities that make an organisation distinctive, employee-centred and appeal to those employees who will thrive and perform to their best in its culture.(149) Employer branding therefore, improves attraction to the organisation. Employer branding is a vital strategy which organisations must employ to attract the best candidates in the industry.(92) Other EMS systems identified packages that may attract prospective ALS practitioners to EMS organisations.(150) These are not rank ordered and include:

- A market related salary,
- A safe and hygienic working environment,
- Professional autonomy,
- Work that is challenging to the employee,
- Paid time off,
- Job stability,
- Hours of work flexibility,
- Access to coaching and mentoring programmes,
- Access to occupational health and safety programmes including counselling,
- Access and support for training and education including study leave,

An employer's mission, culture and values contribute to its branding. Such material must be communicated in all advertisement material in an effort to attract employees. This would ensure that as the new recruit enters the organisation his/her expectations are shaped by the employer's brand. Employer branding must be authentic as a lack thereof will make new recruits feel deceived and result in high turnover rates.(151)

Table 3.3: Organisational factors for recruitment

Organisational factors for recruitment	
1	Organisational personnel responsible for the recruitment process
2	Number of employees required to meet the organisation's goals
3	Appropriate qualification of the applicant
4	Experience of the applicants
5	Market related salary being offered to the applicants
6	Additional benefits package
7	Paid time off packages
8	Geographical positioning of the recruits
9	Additional equipment requirements for the new recruits
10	Extended quality assurance processes to accommodate the new recruits
11	Job description of the new recruits

Source: adapted from Breaugh(145)

This section focused on the factors related to the recruitment of ALS practitioners. Literature reveals that an organisations image plays a significant role in attracting prospective employees. Furthermore, available empirical evidence shows that the work environment, employment package and professional development contribute significantly to a practitioner's recruitment.

3.5.2 Retention of ALS practitioners

Retention, like recruitment, is a systematic process by which an organisation retains skilled ALS practitioners in their employment. Attracting ALS practitioners is a challenge which many EMS recognise. However, when this finite human resource for health has been recruited, retaining their talent then poses a new set of challenges. Human resources, in many instances, focus on recruiting employees, but once the employee is employed, the promises mentioned at recruitment are forgotten causing the new employee to become distressed.(92) This then translates to poor retention.

Once an organisation has successfully recruited a skilled ALS practitioner for the job organisations must implement effective retention strategies to ensure that the employee is retained.(152) Retention efforts must begin from day one with new recruits, who often feel alone in their new work environment.(153) Hospital management found that HCWs

begin to think about leaving 180 days into their new job, and half of the recruits leave after their first year of employment. These studies recommend meeting with new employees every two to three months to ensure they are receiving adequate support and guidance.(153) Regular meetings open lines of communication with the manager to discuss any areas of concern that may arise before the employee starts to look for alternate employment.

The plethora of literature on HCW retention demonstrates concerns about the delivery of an effective healthcare system in the absence of human resources for health.(154) Studies conducted by EMS in Virginia explored retention strategies for ALS practitioners. The study identified four key principles of retention: the life-cycle principle, the success principle, the belonging principle and the friends and family principle.(155)

The life-cycle principle addresses the length of time the ALS practitioner remains in the organisation.(155) The national average that EMTs remain in EMS organisations in the USA is 2.2 years. The average stay of the SA ALS practitioner is unknown. The researchers highlight that ALS practitioners stay longer when leaders take specific actions at specific times in the retention life-cycle. The life-cycle principle can be further categorised into the invest/train phase, active involvement phase and lead/mastery phase. During the invest/train phase the practitioner is introduced into the organisation. It is during this introductory phase that the practitioner becomes familiar with the organisation's mission, vision and organisation culture. This phase may last between 7-18 months. Poor job match and inadequate orientation are considered barriers to retention during this phase. In order to overcome these barriers, EMS organisations must ensure that there is a proper fit between the ALS practitioner and the job. Moreover, these organisations must guarantee a comprehensive orientation programme to all new recruits. This will prevent apprehension in the new recruit and reduce turnover. The active involvement phase encourages ALS practitioners to become involved in their core functions. The importance of this phase is to ensure that the practitioner is satisfied with the job which encourages him/her to stay longer. However, time conflicts with work and family, interpersonal conflicts and burnout act as challenges during this phase. These barriers can be overcome by ensuring the ALS practitioner works on a rostered system and does not exceed 190 hours per month.(156) Managers must also foster a philosophy of teamwork to overcome interpersonal barriers. The lead/mastery phase involves the ALS practitioner progressing to a leadership role or improving their technical skills. Barriers encountered during this phase include low commitment and declining competencies.

The belonging principle explores the ALS practitioner's reasons for staying.(155) These are grouped into categories including: welcome, need and respect. The welcome category highlights the practitioner's comfortableness within his work environment. Teamwork and collegiality with the staff and other employees enhances the practitioner's willingness to stay longer in an organisation. Furthermore, if the practitioner feels needed then they will also stay longer. They will possess a sense of fulfilment if they feel that they are contributing to the organisation's success and improving service delivery to communities. They may also stay longer if they feel that others within the organisation are dependent on them. The third category of the belonging principle highlights respect. ALS practitioners will stay if their ideas are taken into consideration by management. They will also remain if they are given leadership roles within the organisation and trusted to do the right thing.

The success principle reveals that ALS practitioners stay longer when they achieve success in important personal goals(155). Barriers to the success principle include: inflexible hours of work, unskilled management and unskilled emergency medical dispatch. The researchers recommend that EMS managers have regular meetings with practitioners to enquire about their concerns. Remediation programmes must be instated to assist these practitioners in order to encourage retention. In addition, EMS managers are encouraged to create professional development opportunities for life-long learning and improve the practitioner's career.

The friends and family principle relates to ALS practitioners staying longer when they develop strong personal relationships within the organisation.(155) ALS practitioners would stay longer if they were able to foster strong bonds of friendship with other members within the organisation. Furthermore, positive relationships with the EMS manager also encourage ALS practitioner retention.

Changing workforce dynamics and the increasing need to form a balance with work and life has created tighter labour markets. ALS practitioners, unlike employees in other vocations, reach burnout syndrome sooner.(157) The personal, emotional and job stresses are extremely high.(158) These practitioners are therefore withdraw into less stressful positions.

Managing the supply, demand and the flow of ALS practitioners is a vital function of the HRD.(159) The demand for ALS practitioners is influenced by economic, social, demographical, political and technological factors, whereas their supply is influenced by factors such as monetary and non-monetary benefits including job satisfaction. Planning, attracting and retaining ALS practitioners adds value by supporting the

strategic objectives of the organisation.(160) The global labour market, with the absence of borders, creates a multifaceted phenomenon that impacts negatively on healthcare systems in SA.

A mixed method study was conducted to determine the extent and nature of the migration of ALS practitioners from SA(39). Three percent (51/1631) of the 2008 ALS practitioner population participated in the study. The study revealed that ALS emigrants were employed in Australia (18.5%), Angola (14.8%), the Democratic Republic of Congo (11.1%), Madagascar (11.1%), the United Kingdom (11.1%), Russia (7.4%), Canada (3.7%), Guinea (3.7%), Mozambique (3.7%), Namibia (3.7%), Netherlands (3.7%), Tanzania (3.7%) and United Arab Emirates (3.7%). ALS practitioners were practicing remote site medicine, in hospital environments, as business medical representatives, in management, in education and operational duties. The study found that ALS practitioners had emigrated due to working conditions, physical security and economic considerations.

The high turnover of ALS practitioners has a negative impact on EMS organisations. (161) Turnover is directly associated with increasing financial costs.(162) The spiralling costs of temporary replacement, recruitment and selection can be crippling to an organisation.(163) The loss of these practitioners threatens the survival of businesses and compromises service delivery. The loss of skills also forces existing employees to handle increased workloads. Voluntary employee turnover is one of the largest contributors to workforce instability. Employee turnover, to an extent, is due to uncontrollable factors. However, organisational determinants of turnover can be controlled and managed.(164) Retention strategies can therefore be short term (responsive) or long term (preventative). Responsive strategies refer to an organisation's ability to be able to counter an employee's intent to leave with immediate solutions. An example would be a counter-offer to the prospective employer's salary offer. Conversely, preventative organisational strategies require planning and coordination.(164) Core employees within an organisation require long-term strategies to retain their skills. Although salary may be considered important, other long-term retention strategies include career development, job autonomy and teamwork.

3.5.2.1 Migration of ALS practitioners

In the global health market, HCWs are free to change their places of work, readily moving from country to country seeking the best perceived advantage. This however,

challenges the effective delivery of healthcare systems. Migration has many trends and patterns including internal, international and cross industry migration (Figure 3.3).

Internal migration can be described as the movement of HCWs within a country. This commonly occurs between rural and urban areas.(165) Internal migration also involves the movement of HCWs from public to the private sector. Generally, these HCWs move from poorer communities in rural areas which are resource deprived to larger cities. Migration of such a nature causes inequalities in healthcare distribution.

International migration involves the movement of HCWs who temporarily or permanently settle in a country which was not their original place of birth.(165) The movement of people across borders has contributed to countries' social, economic, political and technological advancements.(166) The movement of large numbers of HCWs creates voids in their countries of origin. Emigration also poses an ethical dilemma; is it ethical for high-income countries (HICs) to poach HCWs from low- and middle-income countries (LMICs)? On the other hand, how can a HCW be prevented from seeking a better life in a HIC?

The movement of HCWs is not a new phenomenon. However, it has become more prevalent recently.(167) The number of countries with a critical shortage of HCWs has increased to 57 with a gross deficit of doctors and nurses noted.(168) Africa only has 2.3 HCWs per 1000 population, compared with the Americas, who boast 24.8 HCWs per 1000 population.(168) Common reasons cited by HCWs for seeking work outside their borders include: poor work conditions, low remuneration and lack of incentives, or insufficient availability of training and avenues for professional development. The erosion of national boundaries has simplified the movement of HCWs regionally and international.

Cross industry migration is a form of internal migration whereby a HCW exits the healthcare field to pursue another vocation, perhaps in a more lucrative, non-health related field. The lost skills can be likened to international migration.(163)

Another group of ALS practitioners in SA may not fit entirely into any of the listed categories of migration. These practitioners work on a rotational basis, commonly six weeks on duty and three weeks off (6:3). They are flown into the required country and housed at a remote work station for six weeks. They then return to SA for a three week rest period. While some ALS practitioners choose to work in SA during their rest period, the majority do not. Although these practitioners have not migrated, their skills are lost to the country.

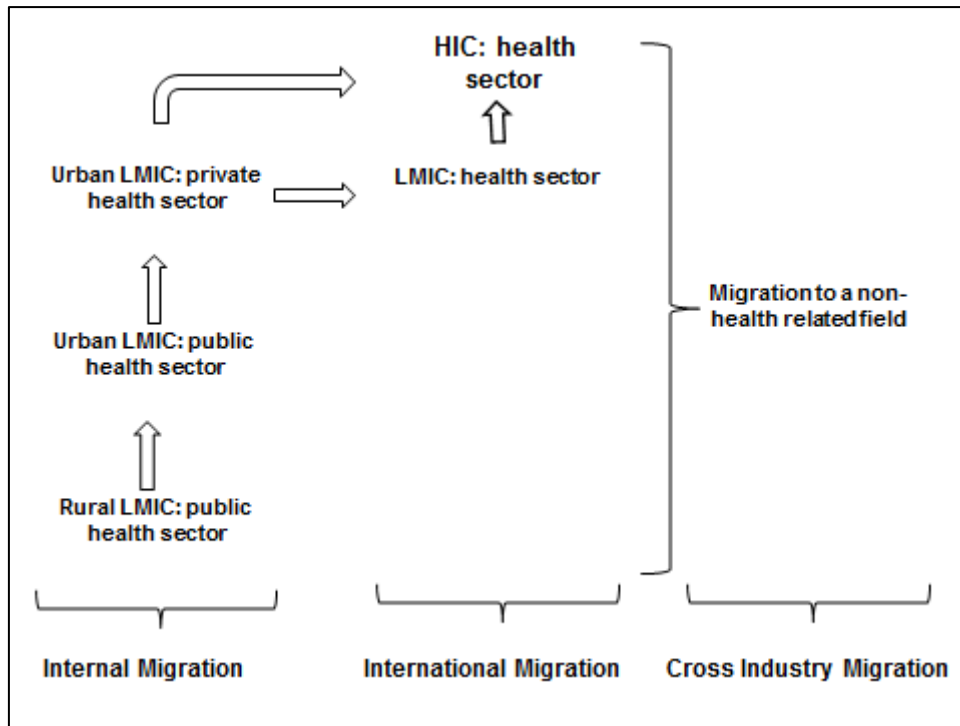


Figure 3.3: Patterns of migration of ALS practitioners

Source: adapted from Awases(1) and Padarath(167)

LMIC: Low and middle income country, HIC: High income country

3.5.2.2 Factors contributing to migration

Migration can be attributed to factors which have been allocated into two groups; push and pull. Push factors generally encourage employees to leave their country of origin and are associated with negativity, whereas pull factors draw or attract employees to another country and are generally associated with positivity.(167) Push and pull factors directly affect SA trained ALS practitioners (Table 3.4).(39)

Govender(39) identified twelve (12) steering principles as part of a framework development process to retain migrating SA undergraduate ALS paramedics. The mixed methods research study design included participants completing a questionnaire followed by in-depth interviews. The study showed that factors such as job security (100%), quality of life (100%), work conditions (90%), economic considerations (75%), the PBEC (75%), physical security (70%), EMS industry specific factors (65%), education and training (60%) and political considerations (50%) contributed to participants' decisions to remain or return to the SA EMS environment. The research

highlighted important steering principles, which if adopted by SA EMS organisations, may result in a decrease in the migration patterns of ALS practitioners.

Push and pull factors do not occur in isolation but rather interact with each other.(167) Push factors commonly experienced by ALS practitioners include limited access to basic facilities, poor working relationships with colleagues and EMS managers, defective/ inadequate equipment and a lack of surgical sundries, poor recognition from managers and colleagues, increased work related stress levels, gender discrimination, poor training and development opportunities, safety and security concerns, the HIV/AIDS epidemic and care and risk concerns.(146)

Pull factors are diverse and may depend on the recipient country. Practitioners seek opportunities for further training with career development benefits, better living conditions, a safer work environment, equal opportunities for all, job stability, technologically advanced medical equipment, an improved salary structure and an improved quality of life.(68)

HCWs are often willing to leave their present positions for higher salaries elsewhere.(163) Patterns have emerged in which HCWs are seeking better paid jobs not only in HICs but also in less-poor countries within their region. As highlighted in previous sections, salary outranked all other factors when HCWs were asked what would make them remain in their home country.

Effective retention strategies are dependent on significant political and financial commitments. Retention strategies should therefore receive the support of national, provincial and regional ministries.(169) In a study conducted in Kenya, a focus group discussion identified characteristics of an effective incentive system.(170) The incentive system should:

- Present a well-designed and supported package in both financial and non-financial terms,
- Involve input from all relevant stakeholders,
- Embrace the principles of transparency,
- Minimise or avoid bureaucracy,
- Fit the purpose for which it is intended,
- Maintain the strategic impact of the incentive components,
- Employ a combination of financial and non-financial incentives,

- Conduct regular and systemic reviews and evaluate its impact, and
- Motivate the target population.

Table 3.4: Push and pull factors for ALS practitioners

Push factors	Pull factors
Lack of suitable vacancies	Availability of jobs
Lower than market-related salaries	Above average salaries
Salary disparity between employees	Economically stable country
Increased workloads	Reasonable workloads
Deteriorating work environment	Better social systems
Poor promotion opportunities and poor HR practices	Good quality of life
Unsafe and unhygienic working environments	Reasonable working conditions
Inadequate, outdated and damaged equipment	Attainment of skilled employees
Political instability	Politically stable country
Gender discrimination	Opportunities to study
Change in patient disease profile	Safe living environment
Poor recognition for job well done	Opportunities to travel abroad
Poor housing and inadequately subsidised housing	
Lack of transport	
Diminishing social systems	
Security concerns for family	
Poor educational incentives	
Poor medical infrastructure	
Inadequate allowances	
Inadequate pension	

Source: Govender(39)

Pull factors discussed above draw ALS practitioners away from the SA EMS industry to systems that are perceived to be better. No study has been conducted to date to determine the effect of pull factors on ALS practitioners once in the recipient country.

3.5.3 Motivation of ALS practitioners

Motivation has been defined as an individual's degree of willingness to exert and maintain effort towards organisational goals, conditioned by the effort's ability to satisfy some individual need.(171) Motivation is an internal state and can therefore affect the practitioner positively or negatively. Although motivation is an individual, internal and unobservable process, its determinants can be measured by assessing the practitioner's

behaviour (i.e., what the practitioner does), affection (i.e., what the practitioner feels) and cognitive processes (i.e., what practitioners think).(172)

Psychologists define intrinsic motivation as an inherent driver within an employee which assists them in achieving their desired goals.(171) Emanating from within the employee, intrinsic motivation is said to energise them to a sense of self-enjoyment from achieving their desired tasks. On the contrary, extrinsic motivation is the external factors, offered by employers (e.g., rewards), which are used to influence a desired behaviour from the employee.

Franco *et al.* conducted an exploratory two-country study evaluating the determinants and consequences of HCW motivation in a Jordanian and a Georgian hospital.(172) The three phase study consisted of a contextual analysis, 360-degree assessment and an in-depth analysis phase which were built on each other. Determinants of motivation that were identified included self-efficacy (e.g., HCW confidence, ability to do the job and cope with changes), pride, management openness, job properties and values. Financial and non-financial incentives were highlighted to improve HCW motivation.

HCW motivation is an important determinant in the health sector. Given that healthcare delivery is very labour intensive, efficiency and equity is directly affected by HCW motivation.(173) Motivators create a positive work environment where the employee is valued and supported for contributing to the greater good.(173) As soon as employees feel that their salary, working conditions, living conditions and other satisfiers are adequate and within a reasonable norm for the type of job, motivators can be used as a powerful tool to increase productivity and create a positive environment.

Satisfiers cannot motivate employees, but can minimise dissatisfaction with the work environment.(84, 174) Satisfiers however, can dissatisfy if absent or mishandled. Furthermore, satisfiers are especially important to attract, retain and motivate ALS practitioners. Motivators have been identified to make employees productive, creative and committed. Congruency between employee and organisational goals therefore denotes positive employee motivation.

The delivery of an effective health system is critically dependent on skilled and motivated health workers in sufficient numbers at the right place and at the right time.(175) Recruiting the right person the first time is necessary for the success of a motivated employee. Maintaining the employee's motivational levels through satisfiers will retain the ALS practitioner in the organisation. Satisfiers are especially important to attract and retain HCWs.(174)

An employee's motivation is affected by various factors and are broadly categorised into the individual, work environment and external factors (Figure 3.4). This process is cyclical and must be re-evaluated regularly. All employees differ in their individual goals but are satisfied by lower (e.g., safety, job security, *etc.*) and higher order (e.g., self-fulfilment, *etc.*) needs. The employee is driven by their goals, motives, values, their ability to perform their work and their desire to do the work.

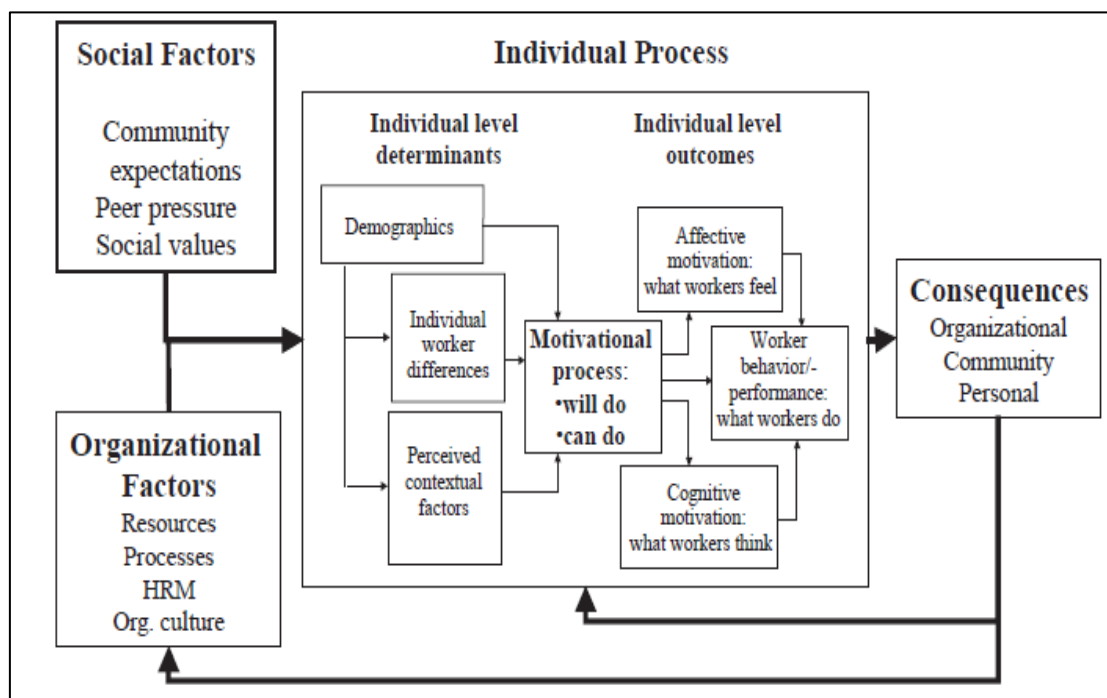


Figure 3.4: Determinants of HCW motivation

Source: Franco(172)

HRM: Human resource management, Org: Organisation

There are numerous motivation theories. These include the need theories, equity theory, expectancy theory, motivator-hygiene theory and job design model among others. Maslow's hierarchy of needs theory(92) and Herzberg's two-factor theory(84) were utilised as the theoretical framework to discuss motivation of the ALS practitioner and its relevance to recruitment and retention. Limited evidence is available on HCW motivation from HICs. Empirical research on motivation of HCWs generally emanates from LMICs. These studies predominantly identify the determinants of HCW motivation by examining their subjective perspectives and recommending strategies to motivate staff.(176)

However, these studies have not assessed HCW motivation widely based on the implementation of the recommended changes.

3.6 Factors affecting ALS practitioner recruitment, retention and motivation

3.6.1 Organisational culture

Over the years organisational culture has been considered an anthropological metaphor which highlights the organisational atmosphere.(177) Organisational culture comprises of values and behaviours of all of its employees. These values, beliefs and principles are reflected in the mannerism in which the organisation operates within the macro and micro environments.(178) Their attributes are further embedded in the organisation's vision, mission, goals, policies, practices, values, norms, language and beliefs. Characteristics of a strong organisational culture include; respect for employees, fair business practices, trust and integrity, teamwork within the organisation, employee engagement and recognition, responsibility and accountability by all employees, effective communication within the organisation and shared decision making. Organisational culture therefore functions to reduce conflict within the organisation, improves coordination and control, reduce uncertainty improve motivation and advances the organisations competitive advantage.

Factors such as teamwork, supervision, organisational processes, resources, organisational culture, organisational feedback on performance and patient interaction may impact on HCW motivation.(171) Clear and concise organisational policies, procedures, guidelines and standards facilitate a homogenous work environment. This influences the HCW to understand and strive to reach the organisation's goals. Vague organisational missions and visions confuse employees and demotivates them. Therefore, a coherent and coordinated response towards the organisational goals is dependent on an effective organisational culture of communication.(171)

MacDavitt *et al.*(179) conducted a systematic review of available research material between January 1995 and June 2007. The researchers aimed to determine employee perceptions of organisational culture. Twenty articles were finally included in the study. The design of all studies were cross-sectional with samples ranging from 632 clinicians in 3 hospitals to nearly 250 000 providers in 168 hospitals. Nurses were the most studied population of HCWs. Most study variables included the participants perceptions of healthcare processes related to staff rostering, teamwork in the work environment, and HCW autonomy in relation to their outcomes including job satisfaction, turnover and

occupational safety. Some studies highlighted evidence that organisational culture was associated with patient outcomes. The study concluded that organisational culture influences HCW outcomes and therefore promoting a positive organisational culture was vital to HCW retention and motivation.

Further, Franco *et al.* (173) identified that HCW motivation is very complex. The researchers argued that although financial incentives are important to addressing HCW motivation, other organisational factors must also be considered. These include organisational culture, human resource practices, professional development, teamwork and communication. The researchers proposed a conceptual model identifying the factors affecting motivation and how organisational culture reforms could positively enhance HCW motivation.

3.6.2 The work environment

The work environment, in the context of EMS, includes the physical structures of EMS (ambulance base, emergency response vehicles and the active scene of an emergency), work hours, safety and hygienic conditions. Binks(120) second area of study explored the ALS practitioner's work environment. Practitioners were concerned about: safety in the work environment (74%), stability of the working environment (70%), relationships with colleagues and other HCWs (53%), recognition and appreciation in the job (77%), support provided by management (76%) and balance between their work life and home life (77%).

Various legislative regulations in SA impact on the ALS practitioner securing and remaining in employment. The Basic Conditions of Employment Act, Number 75 of 1997 was promulgated to ensure fair labour practices in SA. The scope of the act includes: the regulation of working time, employee leave entitlements, remuneration and the work environment.(156) Practitioners must be provided with a safe work environment, appropriate equipment and supplies, supportive supervision and mentoring.(180)

The Labour Relations Act, Number 66 of 1995 regulates the organisational rights of Trade Unions.(181) Moreover, the act promotes and facilitates collective bargaining at the workplace and at sectoral level. It also deals with strikes and lockouts, workplace forums and alternative dispute resolutions. The act promotes the establishment of the Commission for Conciliation, Mediation and Arbitration, Labour Court and Labour Appeal Court as superior courts, with exclusive jurisdiction to decide matters arising from the

Act. Legal matters involving practitioners and the EMS organisation must be resolved amicably. A failure to do so could result in high ALS practitioner turnover rates.

A study was conducted between October 2001-July 2002 regarding the migration of HCWs in six African countries (Cameroon, Ghana, Senegal, South Africa, Uganda and Zimbabwe).(1) The study demonstrated that SA HCWs intended to migrate to countries including the United Kingdom, Australia, United States of America, Canada, New Zealand and Africa. The study also found that 27% of the SA HCW respondents would emigrate in search of a safer environment for their family. Thirty-eight percent of the same respondents also cited a declining healthcare system as a reason for wanting to emigrate. The same percentage of respondents also claimed violence and crime in the workplace as push factors for emigration. A quarter of the respondents wanted to emigrate so that they could save money in a shorter space of time. Respondents from the other five African countries cited similar push factors in their home countries as reasons for their intention to emigrate.(1)

Regional studies revealed similar findings. Chimbari *et al.*(182) conducted a qualitative study in Zimbabwe to determine the government's strategies to retain health professionals. The study revealed major push factors in Zimbabwe which included economic hardship and political insecurity in the country. Other commonly cited push factors included poor remuneration, unattractive financial incentives and poor working conditions. In a separate study conducted in Tanzania, the researchers found that health care professionals were leaving due to great divides in working conditions between rural and urban health facilities, the public and private sectors of health and the disparities in the Tanzanian healthcare labour market as compared to neighbouring countries.(183)

A further qualitative study conducted in Kenya revealed that doctors and nurses were being pushed from the public sector by poor working conditions.(170) Limited career and education opportunities, the risk of contracting HIV and the impact of AIDS at work and poor communication at health facilities compounded the problem. The study recommendations included: effective support and monitoring of incentives, human resource policies aimed at HCWs rights and respect, close monitoring and evaluation of non-financial incentives as retention strategies, HCW training aimed at meeting market demands and retention strategies regularly reviewed and improved.

Abu Al Rub *et al.*(184) found similar findings when they examined the relationship between the work environment, job satisfaction and retention amongst Jordanian nurses. The study recruited 330 nurses from under resourced hospitals. The descriptive correlation designed study found a very strong association between the work

environment and job satisfaction. Further, these variables were also positive for retention. The researchers concluded that improved working conditions were essential to enhance nurse retention.

Liu *et al.*(185) identified that the work environment was a vital component in HCW job satisfaction as it impacted on the organisations performance, quality of patient care delivered and the HCWs retention. Their study was conducted in rural China to identify the HCW job satisfaction levels in relation to the HCWs working environment. The survey questionnaire was completed by 172 clinicians with a response rate 90.5%. The mean HCW job satisfaction score was 83.3 in the category of "somewhat satisfied". The study also highlighted the exploratory factor analysis for job significance (88.2), job competency (87.9) and teamwork (87.7), which was compared with work reward (72.9) and working conditions (79.7). The researchers concluded that the HCWs work environment must be improved to encourage motivation and retention.

Alhassan *et al.*(186) recognized that poor working conditions and low HCW motivation was negatively affecting sub-Saharan countries achieving the MDGs. The researchers therefore aimed to identify interventions to help improve the HCW work environment and motivation. The study recruited 324 HCWs. Data collection tools included the SafeCare Essentials tool, the National Health Insurance Authority certification data and structured HCW interviews related to work environment motivating factors. The study found that HCW motivation was low. HCWs in private facilities perceived better working conditions as a motivator as compared to HCWs in the public sector ($p < 0.05$). Noteworthy positive relations were established between staff satisfaction levels and working conditions ($p < 0.05$). The researchers concluded that an upgraded work environment was required to improve motivation and retention in the public sector of Ghana.

Studies from across the globe reflect that the work environment plays an important role in HCW retention and motivation.

3.6.3 Emergency medical service management

Researchers in the field of management identify that organisational management is a process of effectively and efficiently utilising all available resources (people, equipment, vehicles, surgical sundries, etc.) to achieve the organisations goals and objectives.(92, 187, 188) These are achieved through processes of planning, coordinating, controlling, communicating, organising, forecasting, staffing and leading.(189) EMS managers are expected to be equipped with the knowledge and skills to implement the organisations

operational plan and appropriately manage its human resources. However the EMC profession has been plague by the appointment of inappropriately qualified EMS managers.

Naidoo *et al.*(190) in a 2014 study aimed to determine the ideal medical qualification for EMS managers, whether EMS managers should hold a management qualification and what leadership style was most appropriate for managers of EMS in SA. Through a stratified sampling method, a survey questionnaire was distributed to 120 EMS managers in the KZN province of SA. Findings from the study revealed that an ALS qualification (93%) should be the minimum medical qualification for an appointed EMS manager. Study participants agreed that a managerial qualification (86%) was essential and would be highly beneficial (94%) in EMS management. The researchers concluded that managers with a formal managerial qualification were effective in achieving the organisations goals.

Further, Spence *et al.*(191) in their study aimed to examine the influence of work conditions and workplace rudeness on nurse retention. The study recruited 612 Canadian nurses. Factors such as supervisor and colleague rudeness, and burnout were compared to job satisfaction, organisational obligation, and retention. Statistical analysis using hierarchical multiple linear regression analyses exposed that empowerment, workplace rudeness, and burnout elucidated noteworthy variance in job satisfaction ($R^2=0.46$), organisational commitment ($R^2=0.29$) and nurse turnover intentions ($R^2=0.28$). Empowerment and supervisor rudeness sturdily projected job dissatisfaction and low commitment ($p<0.001$), but emotional exhaustion and supervisor rudeness revealed employees intention to leave. The researchers concluded that empowering managers with managerial knowledge will prevent workplace rudeness and encourage nurse retention.

Managers in the health related sectors must be equipped with the skills to guide their subordinates. In a 2008 mixed method study completed in Swaziland, the researchers aimed to determine retention strategies for the health sector workforce.(192) They found that push factors were great in enhancing employee loss in the country's health system. Participants reacted negatively towards the overburdened healthcare system, the poor and unhygienic work conditions, lack of equitable salaries for HCWs, poorly equipped health departments, lack of appropriate supervision and a lack of recognition for their dedicated work. A participant in that study commented,

“These kinds of challenges lead to the delivery of poor quality services to our clients and one needs to be self-motivated to continue working in such an environment”.

The study recommended that the DoH should collaborate with training institutions to design specific training programmes for managers; introduce additional annual leave days, cyclical staff roster systems and flexible working hours; managers should be up skilled with quality management tools of supervision, staff appraisal, staff satisfaction surveys, leadership and guidance. The researchers further recommended that *“Health institutions need to show employees they are valued and treat them with respect”*. Further retention strategies should: include staff in organisational planning and decision-making, job stability, pay equity, offer bonuses, demonstrate to new employees that there are opportunities for career development within the organisation, offer night shift and weekend allowances and ensure the availability of a staff wellness programme.

Leadership was identified as an essential management skill to the attraction and retention of talented staff. A 2008 study explored nurse managers’ leadership behaviour in relation to job satisfaction and a creative work environment. The survey questionnaire was completed by 770 nurses. The study found that managers who were perceived as ‘super’ had the highest job satisfaction rates. The study also found that the correlation between leadership and creative work climate was stronger than the relationship between leadership and job satisfaction. The study concluded that the managers’ ability to be a leader had a key affect on the work environment.

Mbindyo *et al.*(176) argue that healthcare management is an important link in HCW motivation. The researchers therefore aimed to determine factors that influenced HCW motivation. The qualitative study recruited 185 HCWs. Data collection methods included individual in-depth interviews, small-group interviews and focus group discussions. The researchers identified that effective management and supportive leadership will help create a favourable working relation amongst HCWs and advance motivation. Further, improved management skills by creating promotion opportunities, effective performance appraisal processes and good organisational communication will minimize demotivation. The researchers concluded that effective management skills were essential to motivating HCWs.

3.6.4 Resources

ALS practitioners are transported with an emergency response vehicle to emergency scenarios. This serviceable emergency response vehicle is therefore a vital link in the ALS practitioner being able to access the critical patient. Further, the ALS practitioner is

dependent on functional medical equipment and surgical sundries to perform life saving skills in time critical situations. Failure by EMS organisations to provide ALS practitioners with a serviceable emergency response vehicle, technologically advanced medical equipment and the appropriate surgical sundries compromises the critical patients access to effective treatment.(193)

In most instances, the practice of ALS prides itself on advanced technologies. This helps to reduce risks when treating critical patients. However the inadequate supply of resources and outdated technologies impede effective service delivery.(171) The Occupational Health and Safety Act, Number 85 of 1993 has provisions to ensure practitioners function in safe environments with approved equipment.(194) Defective equipment will jeopardise the safety of both ALS practitioners and their patients. This may also lead to high turnover rates.

Binks(120) fifth study area focused on the ALS practitioner's professional practice. Practitioners were concerned about: equipment utilisation (81%), varying levels of personnel competency (75%), the effects of their work on their family (70%), their autonomy in the work environment (68%), working alone on response vehicles (58%) and the limitations on their scope of practice (58%). Participants also highlighted reasons for leaving their SA EMS organisations: poor salaries, lack of managerial support, no avenues for personal development within the organisation and poor career advancement opportunities.

Further, Tucker and Spear(195) aimed to explore the work environment of HCWs focusing on their performance related to supplying information, materials, and equipment during patient care. Data collection methods included primary observation, semi-structured interviews, and survey questionnaires. Minute-by-minute data related to the activities of 11 nurses was collected. The researchers found that an average of 8.4 work system failures per eight-hour shift was observed. Five of the most frequent types of failures involved, medications, orders, supplies, staffing, and equipment. The survey questionnaires also yielded similar results. The researchers concluded that appropriately designed systems and processes will reduce failures. Further HCWs must be provided with the appropriate supplies and materials to undertake their tasks.

3.6.5 Teamwork

Teamwork in the context of healthcare involves two or more HCWs functioning together to assess, plan and execute effective patient care. Teamwork is therefore predicated on

four key principles: leadership, situation monitoring, mutual support and communication.(196) The leadership role involves the leader being able to direct and coordinate, assign tasks, motivate team members, resource allocation and facilitate optimum team performance. Situation monitoring includes the process of actively scanning and assessing situations by team members in order to gain information and understanding to support the functioning of the team. Mutual support comprises of the ability to anticipate and support other team members through accurate knowledge about their responsibilities and workload. Communication in a team is the process by which information is clearly and accurately exchanged among team members.

The practice of EMC is very labour intensive and is therefore dependent on teamwork to achieve optimal patient care. The ALS practitioner is reliant on team members to locate, access, stabilize and transport the critical patient. However many teams are challenged by the individual professional identities of the members. Kvarnstrom's(197) study aimed to identify and describe problems experienced by HCWs in relation to interprofessional teamwork. The researchers collected data using individual interviews with 18 HCWs. The study found that team dynamics related to HCW knowledge contributions, organisational factors and the varying professional backgrounds contributed to poor collaboration. The lack of teamwork and collaborative resources restricted the patients holistic care.

Teamwork has been shown to reduce work related stress and improve job satisfaction. Bartram *et al.*(198) identified that work related stress and job satisfaction of HCWs have been associated with recruitment and retention. Their study recruited a sample of 157 nurses from a private hospital in Melbourne, Australia. The study findings reflect that collegiality from HCWs supervisor and work colleagues reduced their work related stress and improved job satisfaction.

Teamwork is also essential in improving patient safety. Manser(199) conducted a systematic review of research related to teamwork in demanding hospital settings. Studies that were conducted in operating rooms, intensive care units, emergency departments and resuscitation teams were included in the study cohort. The study found that teamwork played an important role in the prevention of adverse events. The study also identified that teamwork was related to effective communication, coordination and leadership.

Table 3.5: Factors influencing HCW teamwork

Skills	Knowledge	Traits	Motives
Ability to influence	Case/care management	Age	Commits to working collaboratively
Analysis of data	Clinical content	Appearance	Having fun
Conflict management	Knowledge of management	Assertive behaviour	Commits to organisation
Decision making	Organisational goals and strategies	Cooperative attitude	Commits to profession
Leadership	Organisational politics	Courage to disagree	Commits to quality outcome
Listening	Organisational politics	Self-directed learning	Ethical practice
Meeting management	Organisational roles of other team members	Encourages others	Commits to interdisciplinary processes
Monitor and evaluate	Self-awareness	Facilitates participation	Need to win
Motivation of others	Team process and development	Interpersonal relationships	Consumer focus
Negotiation	Understanding KPIs	Judgement	Social justice
Peer counselling		Personality	Strive for recognition
Performance management		Positive attitude	Strive for high performance
Planning		Reflective practice	Support for team decisions
Provision of feedback		Respect for others	Support for team goals
Self-management		Self-confidence	Task completion
Time management		Sense of humour	
Verbal communication		Teamwork experience	
Written communication		Tolerant of stress	

Source: Leggart(200)

KPIs : Key performance indicators

Leggart(200) identified factors related to the HCW that influence teamwork (Table 3.5).

These factors improve team cohesiveness and have been strongly linked to HCW

retention and motivation. Further, effective teamwork and communication has been shown to reduce HCW turnover. McCulloch *et al.*(201) conducted a systematic literature review focusing on teamwork training for HCWs. Their search parameters included material on teamwork skills, staff attitude, clinical outcomes, efficiency and technical performance. A total of 1 036 abstracts were initially identified, but only 14 articles were analysed. Studies reviewed reported an improvement in teamwork after training. In addition, studies reported improved technical performance, improved efficiency and clinical benefits. Some studies also showed a reduction in intention to leave after teamwork training.

3.6.6 Workplace communication

Workplace communication has been identified as a key performance indicator of improving organisational productivity. Heightened employee retention and motivation has been linked to effective communication up and down the chain of organisational communication. By facilitating improved two-way communication, organisations improve staff engagement with achieving the organisations mission and goals.(202) Welch and Jackson(202) also identified that in order to promote commitment to the organisation, “a sense of belonging to it, awareness of its changing environment and understanding of its evolving aims” had to be communicated to employees.

Organisational communication develops better internal communication with all stakeholders (employees). This process of opening up communication channels will enhance the philosophy of shared values and belongingness. Relationship building is also improved as staff engagement increases and productivity improves. Further, improved organisational communication also helps the company to develop transparency and influences attitudes and behaviour. Upward communication also improves the flow of information regarding operational daily matters. This environmental intelligence can help to reshape the organisations corporate strategy and improve external engagement.

ALS practitioners depend on organisational information being communicated. Further, clear channels of communication must be made available for ALS practitioners to highlight their concerns. However, historically communication in the SA EMS industry has been poor. Communication with the EMS organisation, industry and other allied healthcare professions has also been reduced.

Garon (203) aimed to explore nurses communication skills in the workplace. Given that nurses are essential to ensuring holistic patient care, their ability to communicate

efficiently is vital to safeguarding patient safety. The qualitative study recruited 33 nurses from management positions in the California healthcare area. Focus group interviews were utilized as the primary data collection method. The study found that managers need to create a culture of open communication in organisations in order to improve HCW retention and motivation.

3.6.7 Hours of work

Most EMS organisations in SA operate on a 24 hour basis. ALS practitioners are thus placed on a roster system to meet the EMS organisations 24 hour operating timeframe. These practitioners are generally rostered on a 12 hour shift. Day shifts commonly commence at 07h00 and end at 19h00. The night shifts commence at 19h00 and end at 07h00. There is normally a four shift system to ensure 24 hour EMS coverage. The shift system is cyclical with the ALS practitioners working two consecutive dayshifts followed by two consecutive night shifts. These practitioners are then rostered on four off days.

Although there is an end time for when ALS practitioners should conclude their shift, most ALS practitioners' shift over run this scheduled end time. These practitioners are dispatched on emergency calls which progress beyond their 12 hour shift. This minimizes the practitioners rest period in between shifts. Due to staff shortages, ALS practitioners are required to perform compulsory overtime (at minimal or no additional pay) during their rest days. In certain areas of the country, the shortage of ALS practitioners is extreme. In these conditions, the sparse ALS practitioners work on a straight shift basis. These practitioners work between 08h00 to 16h00, Monday to Friday. However, the ALS practitioner is placed on standby duty in the afternoon, evenings and on weekends.

Shift work does not allow the ALS practitioner adequate time to rest. Their physiological patterns of work, eating and sleeping phases continuously change. The shift cycle impacts on the practitioners circadian rhythms of body temperature control, cell division, respiratory rate, hormone production and urinary excretion (Table 3.6).(204) Studies show that features of shift work have suggestions for off-shift welfare of the practitioner.(205) Barnes-Farrell *et al.*(205) scrutinized the impact of shift work (e.g., length of shift and weekend work) on HCW off-shift welfare. Parameters included the HCWs work-to-family conflict, physical well-being and their mental well-being. A survey questionnaire was completed by 906 HCWs from Australia, Brazil, Croatia, and the USA. The study found that shift work characteristics were significant for all three measures of

well-being. The researchers concluded that organisations must carefully consider the implication of shift work on the HCWs welfare as they have implications on HCW recruitment, retention and motivation.

Table 3.6: Effects of shift work on the ALS practitioner

Effects of shift work on the ALS practitioner
Reduction in efficiency of performance
Disruption in family and social activities
Reduction in quantity and quality of sleep
Continuous fatigue
Become prone to anxiety and depression
Increased incidence of medical disorders
Increased risk of medical errors

Source: Harrington(204)

Shift work coupled with minimal recovery time between shifts and extended hours of work challenge the delivery of safe and effective care by ALS practitioners in time critical scenarios. Rogers *et al.*(206) conducted a study to determine the effect of extended hours of work on the HCWs error rate. The study required HCWs to complete a logbook over a two week period. A total of 363 HCWs completed two logbooks. The study found that HCWs generally worked more than their scheduled hours on a daily basis. More than 40% of the total 5 317 work shifts that were logged, surpassed 12 hours. Further, the study revealed that as the duration of the shift increased, the likelihood of errors also increased. Overtime and increased weekly hours had a similar effect on the error rate. The researchers concluded that long hours of work was directly linked to adverse effects. They recommended that policy makers review the work hours of HCWs due to its impact on HCW retention and motivation.

In a later study, Olds and Clarke(207) revealed similar findings. Their study examined the association between nurses protracted hours of work and errors. The study scrutinized secondary data of 11 516 nurses. The study found that nurse errors were significantly related to extended hours of work. Needlestick injuries and medication errors were high. The study concluded that voluntary and mandatory overtime impacted negatively on patient safety.

ALS practitioners predominantly manage high acuity patients. They are therefore required to be well rested. Extended hours of work increases fatigue and reduces safety and performance. Landrigan *et al.*(208) aimed to determine the effect of reduced neurobehavioural performance on adverse events. Their prospective, randomized study examined the rates of adverse events by medical interns working two different shift systems. The first shift system was an extended work shift in excess of 24 hours whilst the controlled group worked reduced shift and weekly hours. Interns working the extended hours made 35.9% more serious medical errors as compared to the control group (136.0 versus 100.1 per 1000 patient-days, $p < 0.001$). Errors in the high acuity area (critical care units) were 22% higher in the group that worked extended hours. Medication errors were 20.8% higher in the same group. Interns in the extended hours work group also made 5.6 times more serious diagnostic errors. The researchers concluded that reducing the work hours of the practitioners would reduce patient errors in high acuity wards.

3.6.8 Equal employment opportunity

The Employment Equity Act, Number 55 of 1998 protects workers and job seekers from unfair discrimination. Furthermore, the act provides a framework for implementing affirmative action. However, the affirmative action component of the act marginalises minority groups in SA in the work environment.(209) Despite being equipped with the appropriate knowledge and skill, these practitioners are side-lined over less qualified individuals. The Broad-Based Black Economic Empowerment (BBBEE) Act, Number 53 of 2003, further creates discrimination in the job market through Black empowerment only. Hence, ALS practitioners are pushed to labour markets abroad.(210)

Kerr-Phillips and Thomas(211) aimed to examine difficulties with retaining SA skills within the country and organisations. Online surveys were utilised as the primary data collection tools. Web-based survey questionnaires were placed on eight New Zealand sites to determine the reason for SA citizens emigrating between 1994-2006. Eighty four willing participants completed the survey. A total of 20 “information-rich” participants were then purposefully selected from the initial group to participate in semi-structured interviews. The study found that macro factors for emigration included concerns related to the prospects of the country, violent crime, corruption and job security. Organisational factors for emigration included poor leadership skills, unethical organisational philosophy and employment equity. The researchers concluded that SA will continue to loose skilled

employees to the international labour market, unless issues related to employment equity are strategically addressed.

3.6.9 Participative decision making

Participative decision making (PDM) involves the extent to which employers permit employees to share in the organisational decision making processes.(212) PDM has shared principles of employee empowerment, shared leadership, employee involvement, dispersed leadership, open-book management, or industrial democracy.(213) Its processes can be formal or informal and employee involvement can range from zero to hundred percent. The power sharing concept of PDM is essential as it gives employees a sense of belonging to the organisation.

Researchers on PDM believe that it improves understanding between employees and managers.(214) PDM has also been shown to have a positive impact on organisational commitment and retention, job satisfaction and motivation, organisational support, employee and organisational performance, improves employee attraction and labour management relations.(215)

ALS practitioners should be included in EMS organisational decision making processes. This will assist with identifying problem areas, providing and selecting solutions to the organisational problem, planning implementation of the agreed solution and evaluation of the process. PDM has been associated with improved patient outcomes and reduced rates of patient mortality, lower levels of work related stress and employee burnout. Jaafarpour and Khani(216) aimed to examine the PDM levels of nurses in Iran. Their descriptive study included the use of the decisional involvement scale (DIS). A simple random sampling technique was utilized to attract a sample of 96 nurses. The study found that the nurses actual involvement in their related work environment was mean (M)=2 and a standard deviation (SD)=0.75. However the nurses preferred levels of involvement was higher (M=4, SD=0.65). Results also showed that collaboration related activities being the most actual involvement facet of the nurses work environments (M=3.1, SD=0.69). The nurses however preferred to be involved in the governance and leadership of their departments (M=4.2, SD=0.56). The researchers concluded by highlighting that there was a growing need for nurse involvement in organisational related decision making processes in order to improve retention and motivation.

Grisson(217) agrees that PDM is associated with positive outcomes of retention and motivation. His study aimed to determine the impact of PDM on managements

effectiveness. A total of 6 300 participants were recruited from public schools. The study found that employees were less likely to leave in an interactive management environment. Whereas ineffective management of PDM enhanced employee turnover. The researcher concluded that effective management was essential in order to enhance PDM.

Similarly, Leshabari *et al.*(218) aimed to determine employee satisfaction and motivation. A cross-sectional study recruited HCWs. The study found that more than 50% of the front line staff (doctors and nurses) were dissatisfied with their jobs. These HCWs dissatisfaction arose from a low salary, lack of equipment and surgical sundries, poor performance appraisal and feedback, lack of proper communication channels with management and absence of participation in the organisational decision making processes. One of the recommendations by the researchers was that the hospital management include HCWs in the decision making processes of the organisation as a motivation strategy.

3.6.10 Workload distribution

ALS practitioner workload refers to the amount of work the practitioner undertakes. As expressed in section 1.1.2, ALS practitioners perform various operational, clinical, educational and administrative roles on a single shift. Equal workload distribution will reduce practitioner work related stress and improve their productivity. Binks(120) third area of focus in his study examined human resource issues. ALS practitioners agreed that: they had excessive workloads (66%), excessive hours of operation (55%), there were more lucrative offers for employment elsewhere (87%) and they were considering leaving their current employment (55%).

Literature reflects that ALS practitioner retention is a systematic process. In a quantitative exploratory questionnaire study conducted in Victoria, Australia, the factors that contributed to the recruitment and retention of graduate critical care nurses were examined.(219) Ninety-seven nurses completed the survey questionnaire. The respondents' rating of an "important score" was due to shift work or roster issues (70%), personal reasons (60%), promotion opportunities (50%), family reasons (45%), lack of adequate support, (40%), staff shortage (40%) and co-worker personalities (20%). Respondents in the same study ranked factors which contributed to their retention on a scale of one to seven with one being the most important and seven being the least important factor. A scale rating of five or less (i.e., seen as important) was recorded for

the following categories: enjoy the work (93.1%), teamwork and even workload distribution (91.3%), constant learning/stimulation (84.5%), support from co-workers (74.1%), job security (64.9%) and flexibility in working hours (55.2%).

Workloads are directly affected by staffing. Shortages therefore adversely affects patient safety due to increased workloads, job satisfaction and staff turnover.(220) A study conducted between 1998–1999 surveyed in excess of 43 000 nurses in five countries. The study found that between 17% and 39% of the participants had intentions to resign from their jobs in the immediate future due to increased job demands brought on by high workloads. The researchers concluded that increasing nursing workloads adversely affected patient safety and contributed to staff burnout, work dissatisfaction and ultimately resulting in high nurse turnover.

Further, Daud-Gallotti *et al.*(221) aimed to appraise the impact of nursing staff workload on hospital acquired infections (HAI), using the Nursing Activities Score (NAS). The prospective study recruited all patients treated in 3 intensive care units for 3 months. Daily medical records and laboratory findings were scrutinized. The study cohort comprised of 195 patients and 43 (22%) developed HAI. These HAIs included pneumonia, urinary-tract, bloodstream, surgical site and other respiratory infections. Study findings also reveal that the NAS and nurse patient care plan were expressively increased in patients with HAI. These patients were also reported to be more prone to adverse events. Extreme nursing workloads (OR=11.41; p=0.019) and the patients clinical condition (OR=1.13; p=0.015) were linked to HAI. The researchers concluded that high workloads was a huge contributing factor to HAI and impacted negatively on patient safety.

3.6.11 Emergency medical dispatcher

Emergency medical dispatchers (EMD) are ideally skilled telecommunicators functioning within an EMS communication centre.(222) These EMD practitioners are the first point of call to the public seeking EMS assistance. They gather information regarding the emergency scenario from the public, process the emergency call and then dispatch the respective EMS resources.(223) Prior to dispatch, the emergency call is triaged according to set organisational guidelines. Based on the triage priority, the required resources are then dispatched to the emergency call. The EMD also provides sound medical advice to the caller prior to the arrival of the EMS. These practitioners also coordinate communication between the EMS and all other internal and external

stakeholders (South African Police Services, Traffic Police Department, Fire Department, Disaster Management, Hospitals, *etc.*). The EMD has thus been identified to play a central role in the ability of the EMS system to achieve its aims and objectives.

EMD practitioners in many SA EMS systems face many challenges. These practitioners lack formal training in specific EMD practices and principles. They are forced to work in resource deprived emergency communication centres with defective equipment and inadequate staffing. By the nature of the job and environment, EMD practitioners are exposed to high levels of work related stress.(224) Inadequate EMS support resources, language barriers with callers, poor country infrastructure and unskilled managers enhance the EMD practitioners stressors. Despite this background and challenges, EMD practitioners are expected to appropriately dispatch ALS practitioners to legitimate emergency calls.

ALS practitioners are frequently dispatched to emergency calls for which their skills are not required. Mismatch between dispatch emergency details and on scene diagnosis frequently occurs in SA EMS systems. ALS practitioners become frustrated due to their repeated inadequate and inappropriate dispatch by the EMD. This contributes to poor morale and high turnover amongst ALS practitioners in SA. Newton(225) aimed to assess the suitability of EMS responses as compared to patient requirements in SA. Prospective vehicle control forms (VCF) and patient report forms (PRF) for a 72 hour period of a public metropolitan EMS organisation were scrutinized. This study was restricted to a small geographical area of SA. Quantitative data from the VCR and PRF were descriptively compared. A total of 1 689 cases were registered in the research study period but only 1 385 were filtered into the study. The study found significant disparities among dispatch and on-scene patient priorities. The category priority (red code/priority 1) for which ALS practitioners were predominantly dispatched constituted 56% of all emergency calls dispatched. But less than 2% of the patients were categorized as red code on-scene ($p < 0.001$). The study found similar results when resource allocation was compared to interventions needed by the patients on-scene. More than 58% of all emergency calls dispatched did not require any interventions. Only 12% of all emergency calls triaged as red code initially required ALS interventions. The researcher concluded that there was a high level of mismatching of resources in the SA EMS system. The inappropriate use of ALS practitioners was contributing to sub-optimal service delivery.

EMD practitioners are dependent on an appropriate triaging process to dispatch ALS practitioners to emergency calls. Sporer *et al.*(226) aimed to examine the sensitivity,

specificity, and positive and negative prognostic values of dispatch triage codes to determine the need for ALS practitioners on-scene. Data for this study was gathered from patient report forms and dispatch data in a metropolitan EMS in California for a 14 month period. All records reflecting transportation and prehospital interventions were included in the study. A total of 64 647 emergency calls were reported. Only 31 187 were transported. The sensitivity and specificity results with 95% confidence intervals were recorded as follows: all EMD calls 84 (83–85), 36 (35–36); abdominal pain, 53 (41–65), 47 (43–51); chest pain 99 (99–100), 2 (1–3); seizure 83 (77–88), 20 (17–23), sick 59 (53–64), 51 (49–54), and unconscious/fainting 99 (98–100), 2 (2–3). The researchers concluded that there was a high sensitivity and a very low specificity for the forecast of calls that required ALS intervention. ALS practitioners in EMS systems outside of SA were also experiencing similar challenges from the EMD.

3.6.12 Clinical governance

Clinical governance within the context of EMS involves a methodical strategy to preserving and improving the quality of patient care delivered. It is predicated on a framework that EMS organisations must deliver high standards of care, be responsible and accountable for those high standards and maintain these standards of excellence by improving patient safety. Clinical governance should be inclusive of education and training, clinical audit, research and development, clinical effectiveness, risk management, openness and information management.(227)

Many EMS systems in SA are devoid of effective clinical governance policies and practices. Binks(120) fourth area of study highlighted ALS practitioners risk factors. Practitioners showed a high degree of concern with regards to: medico-legal risk (78%) due to the lack of effective clinical governance policies in EMS, crime (78%), being involved in a high speed accident (76%), injury at work (75%) and contracting life-threatening diseases (71%).

3.6.13 Allied healthcare workers

ALS practitioners commonly come into contact with doctors and nurses in their daily practice. They may also work together as one team in the EC or HEMS. Furthermore, practitioners often hand-over critical patients or take over a patient for an inter-facility transfer from doctors and nurses. It is during these interactive phases that practitioners

feel they are not given the professional recognition they deserve. All HCWs in SA work in stressful settings with their own individual constraints coupled with difficult emergency cases and environmental compromises. However, interdisciplinary collaboration is essential to reducing further stressful situations and encouraging effective service delivery.(228) The lack of renewed recognition of the ALS practitioner by allied HCWs contributes to high attrition rates. The EMC profession is not given due recognition and EMS managers believe that the disparity in treatment is causing a rift in the healthcare system and contributing to ALS practitioner turnover.

Bowron and Todd(229) aimed to recognise job stressors that forecast the level of job satisfaction in paramedics. Employees from a large metropolitan based EMS organisation were used to identify global job satisfaction. The study was divided into two phases. The qualitative phase used focus groups and informal interviews as data collection methods. Global job satisfaction factors identified included: interactions with hospital nurses and physicians, on-line communications, dispatching, training provided by the ambulance service, relationship with supervisors and standing orders as presently employed by the ambulance service. These variables then formed part of the survey questionnaire of the second phase of the study. The quantitative phase of the study achieved a response rate of 57.3%. Job satisfaction was cited as extremely satisfying by 11%, very satisfying by 29%, satisfying by 45%, and not satisfying by 15% of respondents. On univariate analysis, only the quality of training, quality of physician interaction, and career choice were associated with global job satisfaction. On multivariate analysis, only career choice ($p=0.005$) and quality of physician interaction ($p=0.05$) were predictive of global job satisfaction. The researchers concluded that paramedic interaction with physicians was a predictor of job satisfaction in EMS.

Further, Rosenstein(230) aimed to determine the impact of interdisciplinary interaction of nurses and physicians on nurse recruitment and retention. The quantitative study enrolled nurses, physicians and executives. A total of 1 200 responses were received from the target population. The study found that the daily interactions between the study population strongly influenced nurses' morale. The participants were concerned about the nurse-physician relationships and the disruptive physician behaviour. The researchers concluded that in order to improve nurse satisfaction, morale and retention, the nurse-physician relationships must be remedied.

Larrabee *et al.*(231) showed similar findings in their study which aimed to examine the influence of nurse-physician relationships on job satisfaction and intent to leave. The researchers identified that nurse job dissatisfaction has long been the chief forecaster of

commitment to leave. The non-experimental, predictive design of the study assessed the relationships amongst 90 nurses. The study found that the key predictor of intent to leave was job dissatisfaction. Nurse-physician collaboration and group cohesion contributed greatly to nurse job dissatisfaction. The researcher resolved that systems must be improved to enhance nurse-physician relations and minimize nurse turnover.

3.6.14 Remuneration

ALS practitioner remuneration is considered a significant factor in recruitment, retention and motivation.(232) In SA, ALS practitioner salaries vary within private and public EMS organisations. These salaries are further categorised based on the regional location of the operations. The salaries of ALS practitioners employed in the private sector are kept confidential. However, salaries for public employed practitioners are based on occupation specific dispensation (OSD).(233)

OSD was implemented in 2007 by the SA government as a strategy to improve HCW recruitment and retention.(70) Strategically, OSD aimed to provide the following: differentiated remuneration dispensations in the various public services, a unique salary structure per occupation, grading structures and job profiles to eliminate inter-provincial variations and to provide adequate and clear salary progression and career path opportunities based on the practitioner's competencies, experience and performance.(233, 234)

Subsequent to the implementation of OSD, no assessment has been conducted in the EMS sector. But, Ditlopo *et al.*(233) utilised the Hogwood and Gunn analytical framework to analyse the implementation of OSD in the nursing fraternity in SA. Their analysis is presented in Table 3.7. It was found that OSD was not evidence-based and lacked both human and financial resource prior to implementation. The implementation process also lacked efficiency as there were no clear guidelines. The study recommended improved management systems of planning, clear guidelines for implementation and improved communication to enhance efficiency in the process. A further post OSD implementation study was conducted by George *et al.*(235) to determine the extent to which financial considerations influenced internal flows and external movements of SA HCWs. The study found that OSD had lowered the risk of HCWs migrating. The researchers recommended that the government improve the working conditions in order to attract, retain and motivate HCWs.

A typical OSD based salary for an experienced ALS practitioner in the public SA EMS sector is 20 000 rands. International adverts for ALS practitioners were presented in section 1.1.3. Internationally, the same practitioners are offered approximately 100 000 rands monthly salaries. Unfortunately, the international markets look more lucrative for these practitioners. However, salary is only one factor which attracts ALS practitioners to an organisation. Lehmann *et al.*(193) conducted a literature review of 55 articles published between 1997 and 2007 to determine the factors that attracted and retained staffing in remote, rural areas in LMIC countries. They found five identifying factors *viz.* individual, local environment, work related, national environment and international environment. Individual factors depended on the HCWs age, gender and marital status. Younger, unmarried HCWs had a greater turnover. HCWs were also concerned about their local environment. An area that lacked proper housing, schools, electricity, water supplies and infrastructure was less likely to attract HCWs. Work related attraction factors included adequate salaries, proper working conditions, availability of resources, skilled managers, recognition, an environment of collegiality and professional advancement opportunities. The study also reflected on the national environment and issues of poor safety and security were not attractive. The international environment also contributed to the HCWs attraction. These HCWs compared their local area of employment to the international job market. Countries like the United Kingdom, Australia, Saudi Arabia, United States of America (USA) and Canada offered these HCWs improved salaries, better working conditions, safer work and living environments, opportunities for career development, freedom from political unrest and a higher quality of life. However, it does not matter on the strength of the pull factors offered by such countries, HCWs will only emigrate if the push factors in their existing country are stronger.(167) Therefore, the researchers recommended that the donor countries improve the working conditions, living conditions and incentives being offered to HCWs to improve attraction and retention.

Salaries earned by ALS practitioners internationally are generally calculated on various factors including their supply and demand.(236) Remuneration is a complex matter to implement in many African countries due to various budgetary constraints. However, the salaries offered must be market related and equivalent to other professionals in the same country.(1) Literature yields that African countries experience difficulty and cannot compete with dollar, pound and euro-based salaries.(1) Recommendations therefore focus on non-financial incentives as a less expensive strategy to retain skilled employees. However, when a sample of 1 020 HCWs were asked what would make them remain in their country of birth, large numbers in Cameroon (68%), Ghana (81%),

SA (78%) and Uganda (84%) claimed that improved salary structures would convince them to stay.(1, 236)

Table 3.7: Hogwood and Gunn’s assessment of OSD amongst nurses in SA

Hogwood and Gunn criteria	OSD assessment
External constraints	Widespread public sector strike accelerated implementation, contributing to insufficient planning before implementation Some contestation over prioritisation of nurses as the first health provider category to benefit from OSD
Adequate time and resources	OSD implementation was rushed Insufficient financial resources Limited human resources Inadequate training of the implementers
Required combination of resources	OSD policy guideline in the form of Resolution 3 of 2007 Poor human resource information system
Policy based on valid theory	Philosophy of OSD policy supported Policy not evidence-based
Clear cause and effect relationship	OSD would provide clear career paths and salary progression for nurses Increase in salary will increase motivation and retention
Minimal dependency relationships	Complex series of events Dependent on nurses submitting proof of Nursing Council qualifications
Agreement of objectives	The objective of OSD was to retain nurses within clinical areas Vagueness in the definition of what constitutes specialisation
Sequencing of events	Roles of implementation stakeholder not made explicit Announcement made prior to ensuring sufficient and combination of available resources
Communication and coordination	Weak communication to frontline nurses Poor coordination amongst key actors
Total compliance	Varied interpretation at institution and provincial level Overpayments and underpayments

Source: Ditlopo(233)

OSD: Occupation specific dispensation

Many healthcare organisations are experiencing difficulties in formulating effective retention strategies for HCWs. African countries experience the greatest risk of high HCW turnover due to their hostile economic environments. Hyperinflation and a scarce HCW labour market worsen the problem. Chibioti *et al.*(237) conducted a case study of a major company in Zimbabwe. The study aimed to examine the causes of employee turnover, the organisations retention practices, create retention practices in order to reduce turnover within the organisation. A total of 2 240 participants were enrolled into the study. Qualitative data was gathered using structured interviews and a survey questionnaire. The study showed that employee turnover was extremely high and most employees indicated intentions of leaving the organisation. The study highlighted that a poor rewards system within the organisation was contributing to the high turnover rates. The researchers recommended that the approach to employee remuneration was a key factor in attracting, retaining, and motivating HCWs.

Smith(238) argued that organisations in the healthcare sector must appraise their rewards system to advance HCW motivation and retention. His study aimed to determine the effect of intrinsic and extrinsic rewards on motivation. The quantitative study used survey questionnaires to gather data. The study found that employees valued a rewards system as a motivating factor. These employees were more motivated by intrinsic rewards as compared to extrinsic rewards. A thirteenth cheque and an annual salary increases (extrinsic rewards) were highly ranked rewards.

Chandler *et al.*(239) identified that poor quality of healthcare was attributed to low motivational levels amongst HCWs. In 2006-2007 they conducted a mixed method study to assess motivation factors among HCWs in Tanzania. Interviews and focus groups were conducted to identify areas of focus for the survey questionnaire. The study enrolled 150 HCWs. The study found that salary was an internal motivator. The researchers concluded that salary was as important requirement for motivation. Additionally, the researchers identified that non-salary related motivation factors will only be effective when salary requirements are satisfied. Further, Lambrou *et al.*(240) aimed to investigate how HCWs are affected by motivational factors. The study utilized a survey questionnaire measuring the nurses remuneration, job attributes, co-workers and achievements. The study enrolled 276 HCWs. The study found that organisational achievements was the highest ranked motivator. The researchers concluded that organisations should enhance motivation through financial and non-financial incentives.

3.6.15 Additional benefits package

Employee benefits are non-salary based compensation offered to employees in addition to their normal salary. Organisations offer different types of benefits as employee attraction, retention and motivation strategies. Benefits may include housing subsidies, medical aid contributions, pension fund contributions, profit sharing and funding for education. Certain benefits packages may also include an allowance package comprising of danger allowance, uniform allowance, travel and subsistence allowance, and utilities allowance. SA ALS practitioners are dependent on a benefits package as subventions to their salary. These practitioners will therefore be attracted, retained and motivated by SA EMS organisations that offer a comprehensive benefits package.

In 2010, Hackland and Stein(3) conducted a cross-sectional on-line survey to identify factors influencing the departure of SA ALS practitioners from operational practice. A total of 166 participants completed the survey questionnaire. The study found the following factors related to the termination of operational practice: dissatisfaction with salary (79%), no control to change situation (67%), lack of promotion (65%), lack of communication (65%), dissatisfaction with benefits (61%), lack of employer appreciation (57%), inadequate/faulty equipment (57%), difficult management structures and systems (57%), inadequate/faulty vehicles (54%), feeling of being overworked (53%), high prevalence of hazards (43%), SA socio-political/economic factors (43%), family dynamics/pressure (42%), inconvenience of shift work (42%) and racial inequality (41%).

A further qualitative study on retention strategies for SA paramedics was undertaken by Binks in 2011.(120) The size of the sample that completed the survey questionnaire was unclear, however the survey questionnaire was distributed to 25 industry representatives. The study focused on five key areas affecting ALS practitioners. The first area of research showed that practitioners were concerned about their occupational benefits and opportunities viz. salary and remuneration (92%), provident and pension fund benefits (76%), opportunities for training and development (85%), career advancement into management (77%), general stress (64%), international salaries (60%) and that emigration offers better living standards (77%).

3.6.16 Paid time off

Paid time off (PTO) allows employees to accumulate hours based on their time at work. PTO is governed by organisational HR policy and practices. Annually employees are allocated the respective hours/days of PTO. These hours/days include sick leave,

vocational leave, study leave, sabbatical leave, family compassionate leave, maternity and paternity leave.

PTO for sick leave allows the ALS practitioner to be away from work to fully recover from their ailment prior to resuming duties. This will ensure that the practitioner is productive when they return to work. PTO for study leave and a sabbatical allow the ALS practitioner paid time off to develop and improve their knowledge and skills. CCA qualified ALS practitioners seek to complete the NDEMC and BTEMC qualifications at HEIs. They however, require paid study leave to complete the 3 or 4 year qualifications. These practitioners are attracted to EMS organisations that offer them opportunities of PTO to study. ALS practitioners also want the flexibility of PTO for family responsibility leave in the event of a death or illness of a close family member.

3.6.17 Employee recognition

Recognition by patients and their family members, friends and family, co-workers and managers improves ALS practitioner appreciation. It improves their organisational belongingness. Additionally, recognition acts as a non-financial incentive to advance ALS practitioner morale, job satisfaction, retention and motivation.

Willis-Shattuck *et al.*(171) identified that the lack of trained and motivated HCWs challenged many healthcare systems in resource deprived areas. HCW retention through effective retention and motivation strategies was key to improving healthcare delivery. The researchers therefore undertook a systematic review of existing research to identify the influence of financial and non-financial incentives on HCW motivation and retention. Twenty qualitative and quantitative studies were included for final review. The study identified seven motivation related themes: resource availability, financial rewards, continuing education, career development, infrastructure, recognition/appreciation and management. Certain studies also showed that non-financial initiatives like employee recognition improved motivation and retention. The researchers concluded that core factors to motivation included: career development, financial incentives, and skilled management. Additionally, financial incentives in isolation are inadequate to motivate HCWs. Non-financial incentives including HCW recognition are extremely important to improve motivation and retention.

Mathauer and Imhoff(241) identified that low HCW motivation in Africa was affecting effective service delivery. Their study therefore aimed to examine the effect of non-financial incentives on HCW motivation in Benin and Kenya. The qualitative study

gathered data using semi-structured interviews from HCWs in public and private facilities. A total of 99 semi-structured interviews were conducted. Data was also gathered from focus groups. The study found that HCWs were generally demotivated due to poor HRM processes. Non-financial incentives of HCW recognition by colleagues and management was an important motivation strategy. The researchers recommended that healthcare management create a working environment that acknowledges the work of HCWs.

Peters *et al.*(242) concur that HCW job satisfaction and motivation was key to optimum health care delivery. The researchers aimed to recognize factors related to HCW job satisfaction and motivation in India. A cross-sectional study utilizing survey questionnaires was conducted with 1 916 public and private sector HCW. The study found that good employment benefits were important to public HCWs. HCW recognition by supervisors was also identified as a key motivator. The researchers recommended that managers should focus on non-financial incentives viz, HCW recognition to improve motivation.

3.6.18 Job description

Job descriptions contain a summary of the tasks, responsibilities and functions of a specific position within an organisation.(92) Job descriptions are generally completed after a job analysis is conducted and the specific knowledge and skills for the job have been identified. ALS practitioners in various EMS systems internationally have an elaborate job description. Focus areas in the ALS practitioner's job description may include operational duties, clinical medicine, administrative duties, educational responsibilities, management and supervisory functions, HEMS duties, coaching and mentorship, quality assurance, research and development and interdisciplinary liaison.

Manafa *et al.*(148) examined the relationship of HCW management and motivated on their performance. The mixed method study gathered quantitative data in the first phase on HCW job satisfaction, the work environment and fairness of treatment in the workplace. HCW dissatisfaction was high due to the lack of support for continuous education and career development by management. Focus group discussions were then conducted with managers to further explore the identified demotivators. The absence of performance appraisal and job descriptions for HCWs were noted. The researchers concluded that organisations needed strong HR practices to improve HCW retention and motivation. A job description was essential for each employee to guide the practitioner in

their daily performance. In the absence of job descriptions, employees stand the risk of being assigned tasks or skills which is outside their scope of practice. Practitioners may be overburdened and inundated with workloads resulting in burnout and high turnover.

3.6.19 Job stability

There were 176 prehospital EMC service providers in the SA EMS industry. A total of 117 EMS organisations employ ALS practitioners.(10) The degrees of the demand for ALS practitioners vary depending on the EMS organisations operations and location. Most ALS practitioners seek long term employment.(4) This ensures that the ALS practitioner is able to provide needy communities with prehospital EMC. Job stability also ensures that the ALS practitioner is able to support their families. The prospect of job stability attracts ALS practitioners to EMS organisations. Job stability also retains and motivates ALS practitioners.

Ojaka *et al.*(243) identified that motivation and retention of HCWs continue to be challenging. The researchers therefore aimed to investigate factors affecting HCW motivation and retention. A cross-sectional study design included interviews with 404 HCWs. The study identified factors contributing to poor retention and motivation including: inadequate access to electricity, lack of equipment, poor infrastructure and transport, lack of proper housing, lack of training opportunities, poor job stability, poor salary, lack of support from supervisor support and increased workloads. The researchers recommended that policy makers must consider these factors in new policy development in order to improve healthcare delivery.

3.6.20 ALS practitioner health and wellness

Health and wellness of an ALS practitioner encompasses their holistic state including physical, social and mental wellbeing.(244) The determinants of ALS practitioner wellness include: social environment (family, friends and community), economic factors (income and expenses), physical environment (living conditions, safety and security), work environment (working conditions, interpersonal relationships and work hours) and personal health (medical conditions, sleep patterns, diet, exercise, smoking and alcohol consumption).(245, 246) Given the physical and mental strain of the job, ALS practitioners are dependent on an effective health and wellness programme. Workplace health and wellness programmes benefit both the employee and employer. A healthier

employee is more productive. The availability of organisational health and wellness programmes improve employee recruitment, retention and motivation.

Studnek *et al.*(247) conducted a study to highlight the key health pointers of EMS professionals. The study's hypothesis was that work related characteristics were related to the practitioners key health pointers. Primary data was gathered utilizing survey questionnaires. The questionnaire was designed using details which were validated previously from the Behavioral Risk Factor Surveillance System (BRFSS) and the Longitudinal Emergency Medical Technicians (EMT) Attributes and Demographics Study (LEADS). The survey questionnaire was sent to 58 435 EMS professionals recertifying with a response rate of 52%. A total of 23.5% EMS professionals reported an existing health condition. These practitioners had a mean body mass index (BMI) of 27.69 kg/m². More than 25% (25.8%) of the participants were obese and more than 75% (75.3%) were inactive. Further, 17.0% of the participants were smokers. The researchers concluded that there was a strong link between the EMS professionals health conditions and their work. Workplace health and wellness programmes were required to improve the professionals health conditions.

Further, Stassen *et al.*(248) aimed to determine the prevalence of burnout in ALS practitioners in the Johannesburg area of SA. The cross-sectional study utilized online survey questionnaires. Emails were sent to 98 prospective participants. The study achieved a response rate of 46%. The Copenhagen Burnout Inventory (CBI) was used with many distracting questions. Thirty percent of the respondents reported burnout according to the CBI score. A further 63% showed some degree of burnout in other CBI subcategories. A total of 23% of ALS practitioners showed burnout in the patient care related category. A further 38% of the participants exhibited burnout in the work-related category and 53% had burnout due to personal issues. The distractor questions revealed that this cohort of ALS practitioners felt that they were overworked, poorly remunerated and were not supported by their managers and colleagues. Effective health and wellness programmes were to assist ALS practitioners deal with burnout.

3.6.21 Career development

Career development is a lifelong progression of learning by the practitioner to achieve their desired professional level. Career development encourage ALS practitioners to improve their knowledge and skills. A CCA short course qualified ALS practitioners can progress to obtain a BTEMC qualification with the assistance of a career development

programme. SA EMS organisations that offer opportunities for career development are therefore attractive to ALS practitioners who may be seeking employment. The availability of career development opportunities also retain and motivate ALS practitioners.(4)

Dieleman *et al.*(249) aimed to define motivation and demotivating factors among HCWs in Mali. The mixed method study involved an exploratory qualitative phase being conducted initially. Data was collected using 28 interviews and eight group discussions. The second phase involved a cross-sectional survey being completed by 370 HCWs. The study found that motivation was influenced by the HCWs job description, their supervisors, opportunities for career development and performance appraisal. The researchers concluded that career development was a key strategy in order to improve healthcare delivery in Mali.

Similarly, Bonenberger *et al.*(250) identified that job satisfaction was an important factor associated with HCW retention and turnover in LMIC. The researchers conducted a cross-sectional survey questionnaire study and interviewed 256 HCWs in Ghana. The study found that 69% of the participants had intentions of leaving. The study also found that motivation (OR=0.74, 95% CI: 0.60 to 0.92) and job satisfaction (OR=0.74, 95% CI: 0.57 to 0.96) were strongly linked to the HCWs intention to leave. The individual components of motivation and job satisfaction that reflected intentions of turnover comprised of career development (OR = 0.56, 95% CI: 0.36 to 0.86), workload (OR = 0.58, 95% CI: 0.34 to 0.99), management (OR = 0.51. 95% CI: 0.30 to 0.84), organisational commitment (OR = 0.36, 95% CI: 0.19 to 0.66), and burnout (OR = 0.59, 95% CI: 0.39 to 0.91). The study concluded that career development was a key strategy to reduce HCW turnover.

The findings from Cowin *et at.*(251) study concurs with previous findings. The researchers aimed to identify the influence of HCWs job satisfaction on retention. The longitudinal study design was descriptive and correlational in nature. The random sample of 2000 HCWs was recruited to complete a survey questionnaire. Time 1 ($n=528$) and 8 months later at Time 2 ($n=332$) was used to measure the HCWs job satisfaction and retention. The study found that the HCWs professional status ($r=0.51$) and organisational policies ($r=0.27$) were significant job satisfaction factors. The researchers recommended that strategies needing execution and evaluation to improve HCW retention included: counseling, career development programs and improving organisational communication.

3.6.22 Coaching and mentorship

Newly qualified ALS practitioners move from novice to experts within a short period (Table 3.1) without allowing for naturalisation of the learning programme and newly acquired skills.(135) These practitioners then have enormous expectations placed on them by the EMS organisations, peers and patients.(17) As much as patient assessment, clinical decision making and treatment modalities are contained in the ALS practitioner's training programmes, a coaching and mentorship programme would facilitate the transition from a student practitioner to an independent ALS practitioner.(252)

Presently in SA, there is no compulsory coaching or mentorship programme for qualifying ALS practitioners. As the era of the EMC profession gains popularity, newly qualified ALS practitioners and organisations are raising concerns about the lack of a coaching and mentorship programme within the profession. Certain EMS organisations in the country have informal coaching and mentorship programmes. The advent of a formal mentorship and coaching programme would allow the newly qualified practitioner to team-up with a seasoned practitioner. Over a specified period of time, this new graduate would gain confidence and learn organisational specific practices.

Relevant literature shows that a formal mentorship and coaching programme benefits both the EMS organisation and the ALS practitioner.(252) Through the process of pairing the practitioners, work readiness is improved. They will become productive quicker instead of becoming consumed by the work environment. Effective mentorship programmes have been linked to fewer litigations for malpractice by newly qualified graduates.(253) Progressive mentorship programmes encourage recruitment and improves retention.(254)

3.7 Incentives to improve ALS practitioner recruitment, retention and motivation

Incentives are factors or conditions which enable and encourage a HCW to stay in their job, profession and country. According to the WHO, incentives are "all the rewards and punishments that providers face as a consequence of the organisations in which they work, the institutions under which they operate and the specific interventions they provide".(255) The availability of incentives have shown positive results in attracting, retaining, motivating, satisfying and improving employee performance.(170) The flexibility of incentives allows them to be offered to individuals, groups of employees or

the entire workforce of an organisation. Accordingly, incentives can be positive or, negative, tangible or intangible and financial or non-financial (Table 3.8).(256)

Table 3.8: Types of incentives

Financial	Non-Financial
Salary / Wages	Safe and hygienic workplace
Pension	Vacation days
Bonuses	Professional autonomy
Medical Aid	Job stability
Allowances (housing, clothing, child care, transportation)	Flexibility in working time and job sharing
Loans	Recognition of work
Tuition reimbursement	Support for career development
	Supervision
	Coaching and mentoring structures
	Access to / support for training and education
	Sabbatical and study leave
	Planned career breaks
	Occupational health and counselling services
	Recreational facilities
	Equal opportunity practices
	Enforced protection of pregnant women against discrimination
	Parental leave

Source: Wickramasekara(161) and Yumkella(163)

Financial incentives are essential to the employee and forms a pivotal part of the employment contract. They can be divided into three broad categories: terms and conditions of employment, performance payments and other financial support provided.

The terms and conditions of employment category includes salaries, pension, health insurance, paid leave packages and allowances (e.g., housing, clothing, child care, transportation and parking). This category is integral as these elements draw employees to an organisation. Reimbursing employees with a market-related salary is a key

competitive tool in the EMS industry. Salary disparities may erode retention strategies(257).

Performance-linked payments in the form of bonuses are paid to employees for additional services provided. They may also be offered as an attraction tool to prospective employees working in suboptimal areas. Some employers also offer a thirteenth cheque or a birthday cheque as a bonus.

Non-financial incentives are outlined in Table 3.8. Empirical research in the medical field clearly show that financial incentives used in isolation are not adequate to retain employees.(241) Non-financial incentives are essential and must be used in conjunction with financial incentives. Non-financial incentives are categorised into five sections: a positive work environment, flexibility in employment arrangements, support for career and professional development, access to essential services and employee-centredness. In addition a supportive management team, work autonomy, the availability of resources, recognition of work achievements and a manageable workload are also crucial to employee retention.

The use of incentivised schemes to motivate HCWs has increased in LMICs.(176) However, the impact that these incentives have had is poorly understood. A systematic review of twenty qualitative and quantitative articles regarding the motivation of HCWs suggested seven major motivational themes: financial rewards, career development, continuing education, hospital infrastructure, resource availability, hospital management and recognition/appreciation.(171) The researchers concluded that motivational factors are country specific. However, financial incentives, career development and management issues are core factors affecting motivation. It was also identified that financial incentives alone are not enough to motivate HCWs. Furthermore, the researchers emphasised that recognition is highly influential in HCW motivation and that adequate resources and appropriate infrastructure can significantly improve morale.

A further study conducted in six African countries involving 1 020 HCWs also alluded to motivation.(1) The vast majority of the SA HCW respondents (77.5%) cited salary as a motivator. Other motivating factors included a healthy work environment (67.8%), better fringe benefits (66.4%), reasonable workload (58.7%), improved facilities and resources (57.8%), improved education and training in the health field (52.6%), provisions for day-care facilities for children of employees (39.7%), improved work relationships (26.1%), better leadership (24.9%), a more peaceful social environment in the country (24.5%) and the appointment of more competent health service managers (23.8%).(1) Similar findings were reported in the other five African countries.

The same study also found that demotivating factors that encourage migration included poor remuneration packages, lack of effectively functioning medical equipment, poor career development options, lack of effective management and socio-political instability. The study concluded that the following factors must be considered in order to motivate and retain HCWs:

- Offer employees market-related salaries and other financial incentives,
- Create avenues for professional advancement and career development,
- Improve infrastructure in urban and rural areas,
- Improve HR systems to make recruitment processes less bureaucratic,
- Skill managers with the appropriate tools to manage HR,
- Improve access to technologically advanced equipment and disposables,
- Improve staff-to-patient ratios to make workloads manageable,
- Improve the economic and political stability of the country, and
- Create a work environment that is employee centred.

Unmet needs (e.g., poor monetary incentives and lack of a supportive work environment) contribute to demotivation.(163) Furthermore, an exploratory qualitative study was conducted in North Vietnam to identify factors for job motivation of rural HCWs.(258) The study highlighted that although financial incentives were important, these factors were not adequate to motivate HCWs to perform optimally. Employees were encouraged to perform better if they felt appreciated and received the support of their managers and colleagues, were respected, had a stable work environment with an adequate salary and received training and development to advance their vocation. Employees were discouraged to perform if they perceived their income and allowances to be low, experienced difficult transportation, poor transmission of information within the organisation, felt inadequate to perform their tasks and experienced heavy workloads. The study determined that both financial and non-financial incentives must be considered as employee motivators. Moreover, they recommended that organisation's improve performance management systems, consult employees regularly when designing and developing motivation systems and ensure that managers are abreast of the impact of HRM tools (e.g., policies and practices) on staff motivation.

Similar findings were reported in a 2005 study conducted in Tanzania.(259) This two-phased qualitative study aimed to explore the motivation, satisfaction and frustration experiences of PHC workers in the Kilimanjaro region of Tanzania. The study determined that understaffing, acting upwards, acting downwards, poor service delivery, lack of training, ineffective supervision and feedback, overcrowding and poor patient referrals, lack of experienced staff and promotion opportunities all impaired motivation.

The study completed by Mathauer and Imhoff(241) recommended a list of incentives and HRM tools. Organisations were encouraged to select their preferred mix of recommendations from the list. Implementation of these recommendations can be incremental based on the organisation's resource availability. The introduction of, and promotion of incentives and HRM tools, includes:

- Group-based performances awards and pay,
- Effort-related awards and pay,
- Consistent application of clearly defined sanctions for wrongful behaviour,
- Exposure to knowledge (training, conferences),
- Team building,
- Low-cost benefits that express personal appreciation (extra free time),
- Development of career development plans,
- Transparent and reliable promotion schemes,
- Continuing professional development, training,
- Supportive supervision and feedback,
- Performance management tools,
- Staff satisfaction surveys,
- Increased staff participation in decision-making processes within the health structure,
- Horizontal and vertical communication among staff,
- Quality improvement teams and building a quality culture,
- Participatory problem assessments and problem-solving processes, and
- Benchmarking and competition among facilities.

In a more recent study conducted in Kenya, the researchers believed that motivation was powerful enough to change or improve HCW and hospital practices.(176) Through a qualitative study, the researchers set out to explore contextual influences on HCW motivation. The findings were found to be in agreement with previous studies conducted in LMICs; poor communication, poor decision making or a lack of transparency, bureaucratic barriers, a lack of resources and poor infrastructure demotivated employees. The researchers concluded that implementing financial incentives may pose a challenge in LMICs. However, certain non-financial incentives can be implemented in areas with limited resources to impact at an individual, organisational and community level to improve HCW motivation.

3.8 Conclusion

The ALS practitioner plays a significant role in reducing mortality and morbidity in the critical patient. Their attained knowledge and skills coupled with other distinguishable characteristics increase their marketability. The increased international demand for SA trained ALS practitioners challenges their national recruitment, retention and motivation.

There are multiple factors affecting ALS practitioner recruitment, retention and motivation. The factors expressed by the literature, can be categorically divided into the work environment, employment package and the practitioner's professional development.

Chapter Four: Methods and design

4.1 Research design

A mixed method design was utilised in this research study. Mixed methods research involves the logic inquiry of induction, deduction and abduction as a means of answering the research objectives.(260) Early purists of qualitative and quantitative research paradigms believed that the two different methods should not be mixed. They believed that “accommodation between paradigms is impossible... we are led to vastly diverse, disparate and totally antithetical ends”.(260) They thus advocated that the two paradigms were totally different, “one professing the superiority of deep, rich, observational data and the other the virtues of hard generalisable data”.(260) More recently however, the mixed methods approach has emerged as an important and useful way of increasing the validity of a research study.(261) Referred to as the “third wave”(262), mixed methods research can be described as a paradigm whereby the researcher combines quantitative and qualitative methods of research into one to achieve its objectives. The two paradigms have been found to complement each other when used together in one research study.(263)

Pure quantitative research is based on the nomothetic approach and is useful for testing and validating theories and hypotheses.(264) This form of research allows for expedited data collection and is cost effective in large sample sizes. Data analysis is less time consuming through the use of statistical software and the findings are generalisable. However, the findings obtained are ‘decontextualised’(265) and may not reflect the occurring phenomenon.(266)

Pure qualitative research on the other hand, displays a holistically contextualised approach. It is based on obtaining participants’ own feelings, experiences, views and opinions during in-depth interviews.(267) Phenomena are described in rich detail and collected in naturalistic settings. Qualitative research adds meaning to words and pictures through narrative descriptions.(262) This approach also has limitations. These include: knowledge produced during inductive inquiry may not be generalisable to other settings, data collection is time consuming and financially expensive, and data analysis is also time consuming and can be easily influenced by the researcher’s personal biases.(264) Qualitative research has been open to scrutiny due to its small or unrepresentative samples, generalisability, replication difficulties, and questions regarding validity and reliability.(265)

Mixed method research is advantageous. It can be used in complex research to answer a wide range of research questions in a single research study.(268) Furthermore, the strengths of one research method can be utilised to overcome the weaknesses of the other.(264) Methods of convergence and corroboration of findings can be used to strengthen the conclusion of the research. The completeness of the knowledge created during mixed method research also increases the generalisability of the results. Although mixed method research is beneficial, purists argue that much work still needs to be done on its methodology.(260) They argue that mixed method research can be expensive, time consuming and difficult for a single researcher to conduct.

Mixed methods research approaches can be designed from the mixed-model. This involves the mixing of quantitative and qualitative paradigms across various stages of the research.(175)

The following strategies can be applied when undertaking mixed method research:

- Triangulation, which is a process of determining the phenomenon through convergence and corroboration of the findings from the different study methods;
- Complementing, whereby the researcher seeks to elaborate, enhance and clarify the results from one method with the results of another method;
- Initiation, which is a process of identifying paradoxes within the research which may result in the research question being changed;
- Development, which is where the findings of one method are used to help inform the other method; and
- Expansion, whereby different methods are utilized to expand the range of the research.(175)

The mixed method research design was utilised in this study to nurture the research findings that flowed from the non-experimental descriptive study. The mixed method approach was able to highlight the strengths of both paradigms utilised while offsetting their weaknesses.(260) The rationale for using this approach was that neither the quantitative nor qualitative method used in isolation would be effective in creating a complete understanding of the research problem. But when used together, they would complement each other and comprehensively address the research problem(265). The diversity of the research population (e.g., age groups, ethnicities, culture, geographical

locations and behavioural factors) demanded the use of a mixed method research design.

The intent to use the mixed method research design was fixed from the outset of the study. This research study followed the sequential explanatory mixed method design. Data collection for the study was divided into two phases. The first phase was quantitative in nature followed by the qualitative phase. The purpose of the first phase (quantitative) of the study was to identify potentially predictive variables and to purposefully select information rich informants for the second phase. Quantitative data gathered in the first phase of the study was explored qualitatively in the second phase. The quantitative research focused on numerical data for deductively deriving logical conclusions.(269) The qualitative research focused on the context of human lives, as well as opinions and experiences which allowed the researcher to develop a holistic picture for inductive development.(270) Focus group sessions and semi-structured interviews were utilised to gather data during the second phase of the study. This helped the researcher understand the reasons why the lack of effective recruitment, retention and motivation factors identified in the first phase posed a significant threat to the EMS industry.

The basis for the use of the mixed methods approach is aligned with the research objectives *viz.* to investigate what factors influenced the recruitment, retention and motivation of ALS practitioners. The quantitative phase identified data and further defined the research problem. The qualitative data and its analysis helped refine and explain the statistical findings by exploring the participants' views in more depth. Identifying the information-rich participants in the quantitative phase was critical to the progress of the study. Information on ALS practitioner behaviour is not readily available in any forum.

The "point of interface"(271) is the point at which quantitative and qualitative research mix during mixed method research. Mixing of the two paradigms was conducted during the analysis and interpretation phase of this study (Figure 4.1).

Table 4.1: Point of interface

Qualitative Textual Evidence					
Focus Group Interviews	Recording Written	Transcription, Translation, Thematic Categories	Content Analysis, Association	Analysis of quotations	Integration Analysis, Drawing conclusions
Design	Collection	Conversion	Analysis	Interpretation	
Questionnaire	Surveys	Codes	Descriptive analysis, Multivariate analysis	Model interpretation	
Quantitative Textual Evidence					

Source: Castro(265)

4.2 Target populations

4.2.1 Phase 1: Quantitative

All SA qualified EMC personnel are compelled to register with the HPCSA: PBEC. The different levels of EMC qualified personnel register on the respective registers. ALS practitioners including CCA, NDEMC and BTEMC graduates (1988-2012), were targeted for this study. The study population was comprised of 1 491 graduates on the Paramedic register (CCA and NDEMC) and 166 on the Emergency Care Practitioner (BTEMC) register (N=1657).(69) SA EMS managers (N=117) employing ALS practitioners were also targeted to participate in the first phase of the study.

4.2.2 Phase 2: Qualitative

The target population for the second phase of the study was information-rich participants from both the ALS practitioner sample and EMS manager sample who had best answered (details of this selection process is provided below) the self-administered survey questionnaire in the first phase of this research study.

4.3 Sampling

There were four sample groups as represented in Table 4.2.

Table 4.2: Sample participants

Sample	Participants
1	ALS practitioners who completed the survey questionnaire
2	EMS managers employing ALS practitioners who completed the survey questionnaire
3	ALS practitioners who participated in the focus group
4	EMS managers who participated in the semi-structured interviews

ALS: Advanced life support, EMS: Emergency medical service

4.3.1 Phase 1: Quantitative

All SA qualified ALS practitioners were invited to participate in the study. The total number (N=1657) of SA qualified ALS graduates were registered with the HPCSA: PBEC in 2011.(69) A sample of 1 309 ALS practitioners completed the survey questionnaire. Determining the exact number of eligible participants from the sample 1 population was challenging as:

- Foreign country organisations employing SA ALS practitioners require that these practitioners maintain their home country registration,
- Certain ALS practitioners working outside the country work on a rotational basis. For example, six weeks on and three weeks off. They may or may not return to SA during their off time,
- Some ALS practitioners hold dual passports,
- ALS practitioners do not fully emigrate and maintain home country citizenship whilst out of the country for prolonged periods, and
- ALS practitioners may practice in more than one country at the same time.

ALS practitioner graduate lists from each SA training institution were scrutinised for personal details. The snowball sampling technique was utilised to attract ALS practitioners to the study. Additional practitioners who did not maintain their HPCSA: PBEC registration were also included in this sample. The social network, Facebook, was searched to locate graduates who were employed outside the EMS profession.

EMS managers from 117 SA EMS organisations employing ALS practitioners were invited to participate in the study. Emails and letters of invitation were sent to all prospective participants.

4.3.2 Phase 2: Qualitative

Purposive sampling was utilised for this phase. Participants were selected based on their questionnaire responses. Participants who best answered (based on the details contained below) the questionnaire in phase one and who were deemed to be “information-rich” based on maximum variation were selected. Criteria utilised to determine “information-rich” ALS participants included:

- Participants with the highest EMC qualifications,
- Participants who had obtained a university qualification in EMC or related fields,
- Participants with greater than five years’ experience in the EMC environment,
- Participants who had diversified and annotated experience in more than one EMC discipline, and
- Practitioners’ diverse work environments were also taken into consideration.

The knowledge, experience and expertise of managers of SA EMS organisations employing ALS practitioners were based on the following selection criteria:

- Managers with the highest EMC qualifications,
- Participants who had obtained a university qualification in EMC or related fields,
- Participants with greater than five years’ management experience in the EMC environment,
- Participants who had diversified and annotated experience in more than one EMC discipline,
- Participants from the various geographical operational areas in SA,
- Managers who annotated ALS practitioner turnover rates in their respective organisations,
- Managers who annotated ALS practitioner vacancy rates in their respective organisations, and

- Managers of private and government EMS organisations.

4.4 Inclusion criteria

4.4.1 Phase 1: Quantitative

All SA qualified ALS practitioners were included in the study. These included CCA, NDEMC and BTEMC graduates, working nationally or internationally. ALS practitioners were required to include their unique HPCSA registration number on the survey questionnaire. This number was cross referenced with the HPCSA list of registered practitioners. This prevented duplication of responses and non-SA qualified ALS practitioners completing the survey questionnaire. Graduates working outside the EMS profession were also included in the study.

All SA EMS organisation managers employing ALS practitioners were also included in the study. SA EMS organisations employing ALS practitioners were cross referenced with the list provided by the Board of Healthcare Funders. This prevented duplication of responses and non-ALS practitioner employing EMS organisations completing the survey questionnaire.

4.4.2 Phase 2: Qualitative

Some participants, ALS practitioners and SA EMS managers who completed the self-administered questionnaires in phase one, were purposefully selected for phase two of the study.

4.5 Exclusion criteria

4.5.1 Phase 1: Quantitative

The following participants were excluded from the first phase of the study:

- Participants who refused to sign the research information and consent letter,
- All other SA EMC qualified graduates including, BAAs, AEAs, Orderlys and ECTs,
- All foreign-qualified ALS practitioners, and
- All managers of SA EMS that did not employ ALS practitioners.

4.5.2 Phase 2: Qualitative

The following participants were excluded from the second phase of the study:

- All participants who refused to participate further with the research, and
- Participants who did not meet the criteria as set out in 4.4.2.

4.6 Research instrument

4.6.1 Phase 1: Questionnaires

Two specifically designed questionnaires were utilised to gather quantitative data in phase one of the study. The questionnaires were developed explicitly to identify ALS practitioner recruitment, retention and motivation factors. One questionnaire was to be completed by sample 1 (Appendix B) and the other by sample 2 (Appendix C).

The questionnaires provided the numerical data that were calculated, compared, and statistically tested. The advantages of using questionnaires included: identifying broad information on ALS practitioner recruitment, retention and motivation, easy administration, ease and timeous distribution to a large group of participants. Furthermore, the questions were standardised and did not require the researcher to be present during data collection. The self-completion questionnaire reduced researcher bias and thus increased the reliability of responses.

Although beneficial in many instances, self-administered questionnaires can be disadvantageous. Data from questionnaires can be affected by certain characteristics of the participants, such as memory, knowledge, experience, motivation and personality. It is not possible to gauge participants' experiences, thoughts, beliefs and opinions by means of a questionnaire. Neither can the researcher elicit in-depth information. There is also no scope for verbal and nonverbal cues. All of the above were alleviated through the qualitative phase of the study.

4.6.2 Phase 2: Focus groups and semi-structured interviews

Data collection for this phase of the study included focus groups for ALS practitioners (Appendix C) and semi-structured, individual, in-depth interviews for EMS managers. The researcher served as the facilitator during the seven focus group sessions and the six semi-structured interviews. The recorded data was transcribed verbatim by a professional transcriber appointed by the researcher. The researcher documented key

words and phrases during the focus group sessions, which were later collated with the recordings during analysis.

Over time, focus group sessions have proven to be a highly efficient technique for data collection. Some benefits include involving a wide range of people. The interaction of the participants during focus group sessions also adds value to the data collected. The extrapolation of participants' opinions, views, insight and experiences through the focus group sessions has been shown to improve the interrogation of the research problem. Although focus groups are beneficial in securing thick information, the perils of group dynamics and confidentiality bring with it the need for caution during their use.

4.6.3 Questionnaire development

Two structured questionnaires were utilised in the first phase of the study. The structured questionnaires provided the participants with options to each question and the participants were required to mark their appropriate answer. The questionnaires were developed through literature related to recruitment, retention and motivation.(1, 3, 39, 69, 120, 145, 150, 163, 170, 171, 191, 192, 217, 254, 272-278)

The questionnaire for sample 1 was comprised of 19 questions seeking demographic and work experience data and three intricate five-point Likert scale questions. The questionnaire for sample 2 had a similar structure, with 13 questions seeking demographic and organisational details and three elaborate five-point Likert scale questions.

The questionnaires were assessed for face validity and content validity by an expert panel comprised of twelve members. The panel consisted of national and international ALS practitioners, private and governmental EMS managers, the HPCSA: PBEC chairperson, a Department of Health representative and academics from HEIs. The questionnaires were also assessed for discrepancies, uncertainties, ambiguity and deficiencies. Expert panel recommendations were considered and the questionnaires were then pilot tested prior to final distribution to participants.

The questionnaires were hosted by Google Documents, which was simple to set up and manage. This free service provided by Google allowed for mobile access to the online questionnaire hosted as Forms. Once the online questionnaires had been completed by participants and all the required fields computed correctly, the questionnaires were submitted online. Google Documents collated all responses and the results were presented in a spreadsheet format for analysis.

4.7 Pilot study

Once the expert panel recommendations had been completed, the questionnaires were pilot tested.(279) The purpose of the pilot test was to establish whether there were any ambiguities in the questionnaires. Twenty-five ALS practitioners and five SA EMS managers participated in the pilot study. These participants represented a small sample of the total population of participants. The participants selected for the pilot study were purposefully identified as information-rich candidates based on their qualifications, knowledge of EMS, geographical location (nationally and internationally), accessibility and contributions to research.

The following instructions were given to all pilot study participants at the start of the pilot study:

- Note the time it takes to complete the questionnaires,
- Comment on the ease of completing the questionnaire via postal mail, email and hyperlinks to social networking site Facebook,
- Comment on the clarity of instructions given to complete the questionnaires,
- Answer all questions contained in the questionnaires,
- When assessing a question, comment on the contents of the question, its simplicity and ease of interpretation,
- Point out all questions that border on ambiguity or are considered unclear,
- Give feedback on the content and whether the questions are relevant to the objectives of the research,
- Comment on whether the layout was clear and attractive, and
- Respond within one week of receiving the questionnaire.

The researcher checked each completed pilot questionnaire. This was to ensure that participants did not experience any problems in following the instructions or in understanding and answering the questions. The completed questionnaires were also reviewed for clarity, consistency and validity. Valid recommendations were considered and the final questionnaire was then distributed to the target populations. The completed pilot study questionnaires were excluded from the final results of the study.

The national postal service was on strike during the time of the pilot study. This posed a challenge as participants in certain geographical areas in SA did not receive the questionnaires timeously. In addition to this, the completed questionnaires did not reach the researcher as desired. However, the survey questionnaires eventually reached their destinations two weeks later, once the strike was terminated.

Participants of the pilot study reported that the online survey questionnaire was easy to access through the hyperlink. They also reported that the questionnaire was simple to complete and submit. Furthermore, participants were encouraged that the questionnaire was hosted online. This ensured mobile access allowed them the flexibility of completing the questionnaire on-the-go. They indicated that this was a better option as it was quicker than having to complete a hard copy, seal it in a self-addressed envelope and return it via the postal service. Some participants aired that they did not have postal access and that international postage was costly.

4.8 Research process: Data collection

4.8.1 Questionnaire distribution: Phase 1

Ethical clearance for the study was awarded by the UCT, Faculty of Health Sciences Human Research Ethics Committee and relevant institutional ethics committees prior to commencement of the research. A comprehensive search to locate as many potential participants as possible was undertaken. The HPCSA: PBEC was approached and the names, postal addresses and contact numbers of all registered ALS practitioners was requested. The eight ALS training institutions in SA, including DUT, UJ, CUT, CPUT, Lebone COEC, Netcare 911 School of Emergency and Critical Care, COEC-KwaZulu-Natal and Provincial Government of Western Cape College of Emergency Care were also approached. The name, postal address, email address and contact numbers for all CCA, NDEMC and BTEMC graduates were requested from these institutions. Details obtained from the training institutions were cross-referenced with the data gathered from the HPCSA: PBEC for accuracy. The Board of Healthcare Funders (BHF) of South Africa provided pertinent details (e.g., postal address, operational area and contact details) of all EMS in SA providing ALS services. SA qualified ALS practitioners working outside the country were accessed through the social networking site, Facebook.

Prospective participants were sent an email informing them of the research and inviting them to participate by completing the online survey questionnaire. Only SA qualified ALS practitioners were encouraged to complete the questionnaire. The email also explained

the process to access the online survey questionnaire. Hardcopies were also posted to all participants for whom the researcher had managed to get a South African postal address. Participants were requested to complete the questionnaire only once, preferably online.

Survey questionnaires were distributed via post to sample 1 and sample 2 groups. The postal package contained a letter of information and consent, the questionnaire and a self-addressed envelope with postage stamp attached.

Table 4.3: Facebook groups targeted

Facebook Groups	Number of Facebook members per group when the survey questionnaire was posted		
	0 Days	60 Days	120 Days
Durban University of Technology: Department of Emergency Medical Care & Rescue	163	166	167
CCA vs NDIP vs BTEMC	586	601	620
EMS South Africa	96	98	100
What's it like to be a Paramedic in South Africa	10	9	9
Emergency Medicine	1 696	1 710	1 770
South African Paramedic Services	8	9	9
EMT – Emergency Medical Treatment	32	35	37
COEC KZN cpd activities	132	130	130
Tribute to the South African Emergency Services	13	14	14
SA Paramedic Vacancies	1 554	1 650	1 706
The Paramedic Mzansi	799	810	860
South African EMS...Back Then	650	708	798
Evidence based pre-hospital Emergency Medicine	800	860	890
Ajeth Gangaram (Researcher)	600	621	630
Total	7 139	7 421	7 740

CCA: Critical care assistant, NDIP: National Diploma in Emergency Medical Care, BTEMC: Bachelor of Technology in Emergency Medical Care, COEC: College of Emergency Care, KZN: KwaZulu-Natal and CPD: Continuing professional development.

Of the 479 questionnaires that were posted to sample 1, 98 were returned completed. Participants were encouraged to complete the survey questionnaire online. Following the initial email to 861 prospective ALS participants, 27 were returned as undeliverable. Although these email addresses were checked and corrected, 15 emails were still returned as undeliverable. These were removed from the database as they were possibly incorrect or no longer in use. A reminder email message (n=846) was sent to participants after 60 days and 120 days. Data collection for phase one was open for six months.

Information on the study and the hyperlink to the online survey questionnaires were posted on the researcher's Facebook page (630 friends) and 13 other pages (Table 4.3). Not all members of the Facebook pages were ALS practitioners. Only SA trained ALS practitioners were invited to participate in the study. Unique practitioner HPCSA numbers were utilised to eliminate non-SA trained ALS practitioners from the study. Following the initial Facebook postings, reminder postings were loaded after 60 days and 120 days. Participants were encouraged to forward the request to all their SA qualified ALS practitioner colleagues.

Information regarding the research was also sent to a privately held database. The database was comprised of 200 SA qualified ALS practitioners. The study details were then forwarded via email to all ALS practitioners on that database. Further reminder emails were sent to members after 60 days and 120 days.

Information of the research was forwarded to the chairperson of The Emergency Care Society of South Africa (ECSSA). He was advised to forward the study information via email to all members on the society's database. ECSSA is a non-profit organisation established in 2009 that represents prehospital EMC practitioners in SA. Although the society had 186 members in 2012, not all members were ALS practitioners. Reminder emails were sent by the chairperson to all society members after 60 days and 120 days.

Ethics approval was also received from committees of ER24 Emergency Medical Care and Response Services and Netcare 911 Emergency Services. Once approval had been received, information of the research was sent to the respective organisational research coordinators who forwarded the research information via email to all ALS practitioners in their employment. ER24 Emergency Medical Care and Response Services employed 80 ALS practitioners and Netcare 911 Emergency Services employed 177. They are amongst the largest employers of ALS practitioners nationally.

Managers of the other 115 EMS organisations in SA were also sent information about the research. They were encouraged to forward the information to their ALS employees. Reminder emails were also sent to ALS practitioners after 60 days and 120 days, via their research coordinators.

4.8.2 Data collection: Phase 2

The purpose of the second phase of the study was to explore the quantitative data obtained from the first phase. The rationale for the qualitative phase was that the statistical results would become more refined by exploring the participants' views in more depth. Data for the second phase were collected through seven focus groups and six semi-structured interviews. The focus groups for ALS practitioners were conducted in four major cities of SA including: Durban, Johannesburg, Bloemfontein and Cape Town, while two were conducted internationally in Kenya and Namibia. These two international countries were amongst the most populous countries employing SA trained ALS practitioners. The focus groups consisted of four to twelve ALS practitioners that were from the private and public sectors and were racially and gender diverse.

The use of focus groups to gather data in qualitative research is not a new phenomenon. Commonly referred to as "organised discussions", "collective activity" and "social events", focus group sessions are a cost effective and time saving method of gathering data from multiple participants.(280) The use of focus groups to gather data was supported by the fact that participants were allowed to interact with each other in order to generate research data. Through creating a platform that encouraged conversation, participants were able to share their experiences, views, comments and raise queries. Participants were allowed to explore and clarify their colleague's views which would not have been achieved through one-on-one interview sessions.(171) Given the diverse conditions under which ALS practitioners function, data gathering through the use of focus groups was opportune for this study. The experiences of ALS in SA are influenced by various factors including: the type of EMS, geographical area, size of the organisation and functionality. Experiences gained from working nationally may also differ from that gained internationally.

Once the data collected in phase one of the study had been captured, participants for the focus groups were identified, based on the criteria mentioned in Section 4.4.2. Selected participants were sent invites to participate in the focus group discussions via post and email. Participants who returned a signed consent letter were then forwarded the

schedules of the focus group sessions. They were informed that the discussions would be recorded and transcribed verbatim. Each focus group had an over-recruitment of 20 percent. ALS practitioners from all provinces were invited. SA qualified ALS practitioners working abroad were also invited. They were encouraged to participate via teleconferencing and Skype. None of the focus group sessions exceeded three hours. The focus group venues were isolated and utilised specifically for data collection purposes. The venues were signposted to prevent any interruptions during the sessions.

The results obtained from the first phase were presented to all focus groups. The participants of the focus groups were then requested to comment on these findings based on their lived experiences in the EMS industry in SA. Participants were relaxed during the focus group sessions and were able to open-up more readily to the open-ended questions in a conversational manner.(281) The semi-structured interview style allowed for valuable data to be gathered from non-verbal cues including jokes and anecdotes.

Information-rich EMS managers identified from the first phase of the study were invited to participate in individual semi-structured interviews. These included managers from both the private and public sector. The semi-structured interviews were conducted in person, via telephone and Skype. The purpose of the individual semi-structured interview with sample 4 was to further explore the research problem and identify strategies to overcome the human resource crisis.

The two phases of the study were conducted sequentially, as displayed in Figure 4.1. Saturation point from focus group discussions is normally achieved between four and seven sessions beyond which there would be a repetition of themes with no new information being shared.(282)

Internal validity: Trustworthiness of the data gathered was maintained using various strategies. Data collected in the first phase of the study was presented to participants in the second phase as a means of determining the accuracy of the findings(284) and to stimulate discussion. Based on the model of Lincoln and Guba, developing trustworthiness in qualitative research is built on four pillars: credibility, dependability, confirmability and transferability.(284)

Credibility of data collection was heightened through the researcher's prolonged interaction with participants in phase two of the study. This ensured an in-depth understanding of the ALS practitioner recruitment, retention and motivation factors. The use of information-rich participants enhanced the strength of the data that was collected.(262) Through focus group discussions and interviews, participants were apt to divulge their lived experiences and views. Gaining the trust of the participants was essential in the data gathering process, which was terminated when data saturation was achieved.(285)

Data collection during the focus group session was conducted in conjunction with the focus group guide, which was designed to eliminate researcher bias. NVivo software was utilised for the analysis of qualitative data to prevent researcher bias during the analysis phase. Furthermore, the qualitative data gathered in the second phase was utilised to support the data gathered in the first phase eliminating researcher bias during the interpretation phase of the data.

Prior to commencing with data collection with sample 3, participants were introduced to each other and the data collection environment.(286) This ensured that the participants were relaxed and familiar with the surroundings and the other participating members in the group. In this way, their reactivity was nullified and their responses were fluent and of good quality. The Hawthorne and novelty effect of the participants were counter-acted through a meet and greet session prior to data collection.(283) Participants were informed that for the purposes of the research, all candidates were equal and no special treatment will be allowed to any participants. Participants were made aware that the data collection sessions would be recorded in the invitation letter and were further informed of the recordings prior to the session to prevent artificial responses.

Dependability during the data collection process of phase two was ensured through stepwise replications of the processes during the focus group and interview sessions.(284) The data collection process was documented after the initial focus group session in Durban and the same processes were replicated in Gauteng, Free State and

Cape Town, yielding valuable data. The data from each focus group session were interpreted and assessed for concepts and themes.

External validity: The accuracy and relevance of the data gathered was assessed by the researcher and audited by the statistician to ensure **confirmability**. Through auditing processes and procedures, it was established that the data gathered was a true reflection of the participants' voices. External generalisability was further ensured through replicating focus group sessions until data saturation was achieved.

The convergence of quantitative and qualitative data during the interpretation phase of the research added to the methodological triangulation of the study. The researcher maintained an audit trail throughout the entire research process with the research proposal, memorandums, raw data, focus group and interview session recordings and data analysis and interpretation.(283)

Three models of generalisability were taken into consideration for this study; statistical generalisation, analytic generalisation and transferability.(287) The statistical generalisability model is commonly used during quantitative research. It refers to the generalisation of the findings of a randomly selected sample onto the greater population. The entire ALS practitioner population was included in phase one of the study (N=1657). A 78.9% response rate was achieved indicating that the findings from the study could be generalised to the entire ALS practitioner population.

The analytical generalisation model is embedded within confirmatory strategies which address the credibility of qualitative research (section 4.9.2.1). The **transferability** model of the findings of the study was ensured through processes of detailed note taking and recording of all focus group and interview sessions. The recordings were then transcribed verbatim maintaining descriptive validity.(283) The transcripts, observations and notes taken during the focus group and interview sessions were then triangulated and analysed for concepts and themes.(284) Purposive sampling was used to gather data during phase two of the study, which ensured that a range of specific data was obtained from the information-rich participants. Data saturation allowed the research to be transferable as evidenced by no new themes emerging; data were then considered rich and thick.(262)

4.10 Data analysis

4.10.1 Analysis of quantitative data

The researcher coded the data from the questionnaires. Version 22 of Statistical Package for the Social Sciences (SPSS) was used to analyse the quantitative data with assistance from a statistician. The statistical aspect of the research encompassed the following:

- Descriptive statistics, using frequency and cross tabulation tables and various types of graphs including pie charts and bar graphs,
- Inferential statistics, using correlations,
- Testing of hypotheses, using chi-square tests for nominal data,
- Testing of hypotheses, using multivariate analysis, and
- Correlations.

4.10.2 Analysis of qualitative data

Content analysis for the qualitative data followed the Castro and Cloe framework(288) using NVivo software. The six step approach included:

- Creating focus group and interview questions and conducting these sessions,
- Extracting response codes from the data that were transcribed and from memorandums,
- Creating thematic categories with the codes,
- Dimensionalising the thematic category via scale coding through connecting the interrelated themes,
- Qualitative-quantitative data analysis, and
- Creating story lines.

4.10.2.1 Step 1: Focus groups and semi-structured interviews

Section 4.9.2 discussed the selection criteria for the participants of the seven focus groups, each composed of sufficient participants to yield diverse information.(283) The findings from the quantitative phase of the study were presented to the focus group

participants. This was intended to elicit thick information from the participants in order to address the research problem.

Enhancing the response of the participants during the focus group sessions was crucial to achieving the research objectives. Participants were made comfortable through various soft skills to ensure that they were relaxed and willing to share their thoughts, opinions, beliefs and experiences. The focus groups were moderated by the researcher, who facilitated the discussion, prompting members to speak, requesting overly talkative members to let others talk, and encouraging all the members to participate.

The researcher ensured that the environment was conducive for group discussion despite the fact that it was being recorded and notes were being taken. There were no late comers. The participants were presented with a specific section of the findings from phase one, which was then open for discussion. After a certain time the next section was presented. This format continued until all the topics had been covered.

4.10.2.2 Step 2: Identifying response codes

The researcher repeatedly listened to the audio recordings, read the transcripts and studied the notes in order to become familiar with the content prior to assigning codes to the data. The Nvivo software package was utilised to assign “In Vivo codes” to the qualitative data from the seven focus groups and six semi-structured interview sessions.

4.10.2.3 Step 3: Creating thematic categories

Several response codes identified in step 2 were assigned to thematic categories (recruitment n=19, retention n=25 and motivation n=16). The assigning of thematic categories was aligned to the research aims and objectives and the recurring views and experiences as expressed by the participants.(265)

4.10.2.4 Step 4: Dimensionalisation

Dimensionalisation involved the assessment of the categories for frequency and intensity. Frequency and intensity scale coding methodologies were further used to analyse the assigned categories. Major categories identified included: the work environment, employment package and professional development.

4.11.2.5 Step 5: Data analytic approaches

Some quantitative descriptive analyses were conducted on the qualitative data.

- Descriptive statistics, using frequency and graphs were utilised.

4.10.2.6 Step 6: Creating story lines

The recontextualisation process involved turning the statistically obtained qualitative data back into stories. The results were then reported in the discussion section of the study. The quantitative statistical results were reported first, followed by the qualitative quotes or themes that support or refute the quantitative results.

4.11 Ethical considerations

Ethical clearance for the study was awarded by the University of Cape Town, Faculty of Health Sciences Human Research Ethics Committee (HREC 299/2012) prior to commencement of the research. Further, ethical approval was received from the research and ethics committees of ER24 Emergency Medical Care and Response Services and Netcare 911 Emergency Services prior to accessing ALS practitioners employed by these organisations.

- **Recruitment:** Participants, who were recruited to participate in this study, did so on their own free will. No individuals were coerced or compelled to participate in the research study. Individuals not wanting to participate were respected for their decision.
- **Participation:** Participants' anonymity was maintained throughout the research. All personal information gathered was kept private, with only the researcher and the supervisors having access to this information.
- **Protection from harm:** No physical, psychological or work related harm was brought onto the participants.
- **Informed consent:** Consent letters (Appendices B and C) were signed by the participants of the study prior to participation. Each contained details on the purpose of the research, the length of participation, potential benefits and harms, assurance of anonymity and assurance that the results of the study would be communicated to them.

- **Sharing results:** The results of this research study will be made available to all participants via peer reviewed journal articles published in SAPSE and ISI journals. A copy of the dissertation will also be placed in the UCT library. This research study will add to the wealth of knowledge on the recruitment, retention and motivation of SA trained ALS practitioners. Further, EMS managers will be encouraged to read the completed research.

4.12 Conclusion

This chapter highlighted the methods and designs which aided the researcher to achieve the research objectives. The use of a mixed method research design was apt in obtaining valuable information. This comprehensive approach ensured that the quantitative and qualitative data collected were mixed appropriately. Furthermore, the use of the data collection tools were critically appraised and justified.

The study's target population and sampling methods were presented. Evidence supporting the use of the data collection tools and methods were highlighted. Validity of the study and the data collection tools were made explicit in this chapter. Furthermore, the various methods of data analysis were explored. The chapter was concluded by highlighting ethical considerations underpinning this research study.

Chapter Five: Results of quantitative data

5.1 ALS practitioner participant results (sample 1)

In total, 1 309 questionnaires were completed, yielding a 78.9% response rate. Nine returned questionnaires were excluded from the study due to not being complete. The research instrument consisted of 109 items, with a measurement at a nominal, ordinal or scale level. Data from sample 1 are presented to show practitioners working in SA, working outside of SA and practitioners who work both in and outside of SA. ALS practitioners who work both in and outside of SA, do so on a rotational basis, e.g., commonly six weeks outside of SA and three weeks in SA.

5.1.1 Section A: Demographic data of sample 1

More than eighty percent (80.8%; n=1050) of sample 1 work in SA, 17% (n=221) work outside SA and only 2.2% (n=29) work both in and out of SA. More White ALS practitioners work in SA (43%; n=452), out of SA (69.7%; n=154) and both in and out of SA (69%; n=20) as compared to the other race groups. Comparatively fewer Black qualified ALS practitioners work outside SA (5.9%; n=13). Based on percentages, more Indian ALS practitioners work outside the country (16.7%; n=37) than in the country (13.4%; n=141) with 6.9% (n=2) working both in and out the country. Only 7.7% (n=17) Coloured qualified ALS practitioners work outside the country as compared to 12.9% (n=135) working in the country. In SA, the Coloured race group represents a mixed race.

Three quarters (75%; n=975) of sample 1 were male. More male ALS practitioners than females work in SA, outside of SA and work both in and out of SA. The minimum age of sample 1 participants was 21 years and the maximum 65 (mean (M)= 35.2, standard deviation (SD)= 6.7 years). Over half (52.9%; n=688) were between the ages of 30 and 40 years, and this was the biggest group working outside the country.

5.1.1.1 Highest education and EMC qualification

Only 1.1% (n=14) of sample 1 obtained a secondary school education, 30.7% (n=399) had a matric/grade 12 and 68.2% (n=887) obtained a tertiary education. Of those working in the country (n=1050), 65.7% (n=690) obtained a tertiary education compared to 80.5% (n=178) who work outside the country.

Almost half (48.4%; n=629) obtained a NDEMC qualification (Figure 5.1). Very few participants were in possession of an MTEMC or PhD. Fewer CCA qualified ALS practitioners work outside the country compared to NDEMC and BTEMC graduates (Table 5.1).

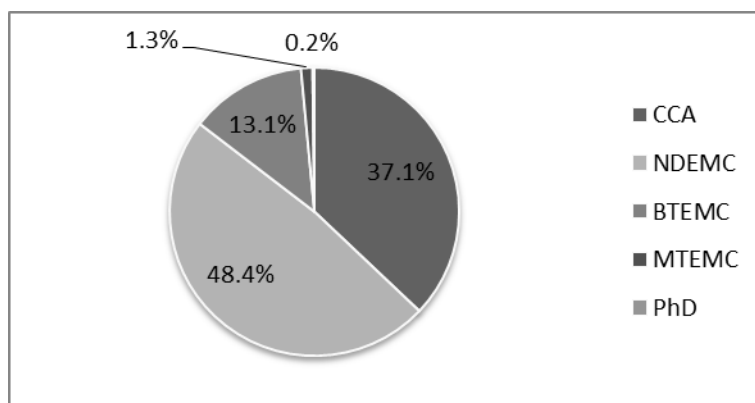


Figure 5.1: Highest EMC qualifications of sample 1

Table 5.1: Distribution of highest EMC qualifications of sample 1

	Work in SA (% (n))	Work outside of SA (% (n))	Work Both in & outside of SA (% (n))	Total (% (n))
CCA	30.0(409)	28.1(62)	37.9(11)	37.1(482)
NDEMC	48.3(507)	48.9(108)	48.3(14)	48.4(629)
BTEMC	11.3(119)	21.3(47)	13.8(4)	13.1(170)
MTEMC	1.3(14)	1.4(3)	0.0(0)	1.3(17)
PhD	0.1(1)	0.5(1)	0.0(0)	0.2(2)
Total	100(1050)	100(221)	100(29)	100(1300)

CCA: Critical care assistant, NDEMC: National Diploma in Emergency Medical Care, BTEMC: Bachelor of Technology in Emergency Medical Care, MTEMC: Master of Technology in Emergency Medical Care, PhD: Doctor of Philosophy

5.1.1.2 Independent medical rescue qualifications

Almost two-thirds (64%; n=309) of the CCA participants had obtained an independent medical rescue qualification. Of these, 35.9% (n=111) had basic medical rescue, 33.3% (n=103) had intermediate medical rescue and 30.8% (n=95) had advanced medical rescue.

5.1.1.3 Institutions from which sample 1 participants obtained their highest EMC qualification

Only 5.6% (n=73) of sample 1 obtained their highest EMC qualification from Lebone COEC, 5.9% (n=77) from Netcare 911 School of Emergency and Critical Care, 19.3% (n=251) from UJ, 13.4% (n=174) from the COEC-KZN, 29% (n=377) from DUT, 13.9% (n=181) from CPUT, 7.8% (n=102) from the Provincial Government of the Western Cape COEC, 4.7% (n=61) from CUT and 0.3% (n=4) from other training institutions. ALS training institutions situated in the four major provinces of the country were responsible for training all of sample 1 participants.

5.1.1.4 Additional EMC qualifications

Table 5.2 shows the rates of obtaining additional EMC qualifications. More ALS practitioners working outside of SA and working both in and outside of SA had obtained additional EMC qualifications than those working in SA.

Table 5.2: Distribution of additional EMC qualifications obtained by sample 1

Additional EMC Qualifications	Work in SA (% (n))	Work outside of SA (% (n))	Work Both in and outside of SA (% (n))
ATLS	11.9 (125)	24.4 (54)	58.6 (17)
PALS	38.7 (406)	59.7 (132)	62.1 (18)
ACLS	51.2 (538)	87.8 (194)	75.9 (22)
ITLS	10.9 (114)	43.9 (97)	55.2 (16)
AHCPC	11.8 (124)	31.2 (69)	55.2 (16)

ATLS= Advanced trauma life support, PALS= Advanced paediatric life support, ACLS= Advanced cardiac life support, ITLS= International trauma life support, AHCPC= Aviation healthcare providers course

5.1.1.5 Other formal qualifications

Of the other formal qualifications obtained by sample 1, general management and occupational health and safety were most common (Table 5.3). Generally, more ALS practitioners working outside of SA and working both in and outside of SA had obtained other formal qualification as compared to ALS practitioners working in SA.

Table 5.3: Distribution of other formal qualifications obtained by sample 1

Other Formal Qualifications	Work in SA (% (n))	Work outside of SA (% (n))	Work Both in and outside of SA (% (n))
General management	6.3 (66)	10.4 (23)	20.1 (6)
Human resource management	1.9 (20)	4.1 (9)	10.3 (3)
General law	0.8 (8)	1.0 (2)	0.0 (0)
Public health management	0.8 (8)	1.4 (3)	0.0 (0)
Disaster management	1.6 (17)	6.9 (15)	17.2 (5)
Project management	0.9 (10)	3.2 (7)	6.9 (2)
Education	2.9 (31)	16.3 (11)	17.2 (5)
Occupational health & safety	2.1 (22)	16.3 (36)	20.1 (6)
Call centre management	0.2 (2)	1.4 (3)	0.0 (0)
Other	2.5 (26)	4.1 (9)	6.9 (2)

5.1.1.6 Years of EMC and ALS experience

The sample had a range of EMC experience from one to 35 years (M= 13.8, SD= 6.5), and ALS experience from one to 30 years (M= 9.3, SD= 5.5).

5.1.1.7 EMC field of experience and current field of employment

More of sample 1 working outside of SA and working both in and outside of SA were experienced in many of the EMC fields as compared to ALS practitioners working in SA (Table 5.4).

Table 5.4: Distribution of EMC field of experience

EMC Field of Experience	Work in SA (% (n))	Work outside of SA (% (n))	Work Both in and outside of SA (% (n))
Operations	97.3 (1022)	95.9 (212)	96.6 (28)
Management	44.0 (462)	70.1 (155)	55.2 (16)
Education	34.2 (359)	54.8 (121)	60.7 (17)
Medical rescue	25.7 (270)	42.1 (93)	51.7 (15)
Public relations/Media liaison	5.0 (52)	7.3 (16)	17.2 (5)
Communication centre/ Call centre agent	7.3 (77)	20.4 (45)	24.1 (7)
Disaster management	39.4 (413)	50.7 (112)	44.8 (13)
Special events	47.0 (493)	62.0 (137)	89.7 (26)
Remote site medicine	11.3 (119)	67.9 (150)	79.3 (23)
Aeromedical	20.8 (218)	55.7 (123)	44.8 (13)
Medical sales representative	1.7 (18)	7.2 (16)	10.3 (3)
Emergency centre	10.7 (112)	32.1 (71)	65.5 (19)
Other	0.5 (5)	0.9 (2)	3.4 (1)

More than sixty percent (61.5%) currently work operationally (Table 5.5). For those working outside of SA and working both in and outside of SA, remote site medicine was the commonest area of work.

Table 5.5: Distribution of current EMC field of employment

EMC Field of Employment	Work in SA (% (n))	Work outside of SA (% (n))	Work Both in and outside of SA (% (n))
Operations	68.9 (723)	31.4 (69)	24.1 (7)
Management	10.4 (109)	6.8 (15)	13.8 (4)
Education	13.4 (141)	5.5 (12)	3.4 (1)
Medical rescue	2.1 (22)	0.5 (1)	0.0 (0)
Public relations/Media liaison	0.0 (0)	0.0 (0)	0.0 (0)
Communication centre/ Call centre agent	0.1 (1)	0.0 (0)	0.0 (0)
Disaster management	0.5 (5)	1.8 (4)	0.0 (0)
Special events	0.6 (6)	0.0 (0)	0.0 (0)
Remote site medicine	0.6 (6)	49.1 (108)	55.2 (16)
Aeromedical	2.2 (23)	5.0 (11)	0.0 (0)
Medical sales representative	0.6 (6)	0.0 (0)	0.0 (0)
Emergency centre	0.5 (5)	0.0 (0)	0.0 (0)
Other	0.3 (3)	0.0 (0)	0.0 (1)

5.1.1.8 Location of employment

Most participants (80.8%; n=1050) work in SA, 17.0% (n=221) work outside of SA and 2.2% (n=29) work both in and outside of SA. More than one-third of sample 1 (34.6%; n=362) who work in SA are employed in Gauteng province, 24.8% (n=260) in KwaZulu-Natal, 22.0% (n=231) in the Western Cape, 1.5% (n=18) in the Northern Cape, 3.5% (n=37) in the Eastern Cape, 5.1% (n=53) in the Free State, 2.6% (n=27) in the North West, 3.4% (n=35) in Limpopo and 2.5% (n=26) in Mpumalanga. This means most (86.5%) ALS work in the four major provinces of the country.

Half (50.2%; n=527) of those who work in the country are employed in the government sector, 42.0% (n=441) in the private sector, 7.6% (n=80) work for the quasi-government and 0.2% (n=2) work for non-governmental organisations. More than seventy-one percent (71.2%; n=748) of sample 1 work in urban areas, 18.7% (n=196) in peri-urban and only 10.1% (n=106) are placed in rural communities.

5.1.1.9 Reasons for sample 1, employed in SA, working overtime

Only 804 (75.6%) participants who worked in SA completed this question regarding working overtime. Of these, 61.9% (n=498) said that it was due to their basic salary being inadequate, 27.1% (n=218) noted that overtime was compulsory, and 10.1% (n=81) worked overtime because they felt that they were passionate about their job. Only 0.8% (n=6) expressed that staff shortages had forced them to work overtime and 0.1% (n=1) worked overtime in an effort to retain their skills.

5.1.1.10 Current country of employment of sample 1 who work outside SA

Table 5.6 shows the current country of employment of sample 1 who work outside of SA and for those who work both in and outside of SA (n=250). In total, the participants work in 46 different countries.

Table 5.6: Country of employment of sample 1 working outside of SA

Country	% (n)	Country	% (n)
Afghanistan	2.0 (5)	Madagascar	0.8 (2)
Angola	2.8 (7)	Malaysia	0.4 (1)
Australia	8.4 (21)	Mali	0.4 (1)
Botswana	2.8 (7)	Mozambique	3.2 (8)
Brazil	0.4 (1)	Namibia	7.6 (19)
Canada	1.6 (4)	New Zealand	3.6 (9)
Central African Republic	0.4 (1)	Nigeria	2.0 (5)
Chad	0.4 (1)	Pakistan	0.4 (1)
Democratic Republic of Congo	3.2 (8)	Papua New Guinea	0.4 (1)
Djibouti	0.4 (1)	Qatar	11.6 (29)
Dubai	0.8 (2)	Saudi Arabia	2.0 (5)
Egypt	0.4 (1)	Senegal	0.4 (1)
Ethiopia	1.2 (3)	Sierra Leone	1.6 (4)
Gabon	1.2 (3)	Singapore	1.6 (4)
Germany	0.4 (1)	Somalia	0.8 (2)
Ghana	0.8 (2)	Swaziland	0.4 (1)
Guinea	2.4 (6)	Tanzania	2.8 (7)
Iraq	1.6 (4)	Thailand	0.4 (1)
Israel	0.8 (2)	Uganda	0.8 (2)
Kazakhstan	0.4 (1)	United Arab Emirates	4.4 (11)
Kenya	12.0 (30)	United Kingdom	4.4 (11)
Liberia	0.4 (1)	United States of America	1.2 (3)
Libya	0.8 (2)	Zambia	3.2 (8)

5.1.2 Reliability statistics of sample 1

Reliability was computed by taking several measurements on the same subjects. A reliability coefficient of 0.70 or higher is considered as “acceptable”. The Cronbach’s alpha score for items in Sections B was 0.971, C was 0.961 and D was 0.977 with an overall score of 0.985. This shows a high level of consistent scoring with high reliability.

5.1.2.1 Factor analysis of sample 1

Factor analysis is a statistical technique utilised for data reduction. This reveals the relationships amongst and between several variables being measured. The Kaiser-Meyer-Olkin and Bartlett's Tests for tables 5.8, 5.9 and 5.10 is reflected below. This shows the measure of the strength of relationship between variables. The requirement is that the Kaiser-Meyer-Olkin Measure of Sampling Adequacy should be greater than 0.50 and the Bartlett's Test of Sphericity be less than 0.05. In all instances, these conditions were satisfied which allows for the factor analysis procedure (Table 5.7). The rotated component matrices are shown below.

Table 5.7: Kaiser-Meyer-Olkin and Bartlett's tests on sample 1

	Kaiser-Meyer_Olkin Measure of Sampling Adequacy	Bartlett's test of Sphericity
Recruitment factors for sample 1	0.965	<0.01
Retention factors for sample1	0.962	<0.01
Motivation factors for sample 1	0.968	<0.01

With reference to Tables 5.8, 5.9 and 5.10;

- The principle component analysis was used as the extraction method, and the rotation method was Varimax with Kaiser Normalisation. This is an orthogonal rotation method that minimises the number of variables that have high loadings on each factor. It simplifies the interpretation of the factors.
- Factor analysis/loading show inter-correlations between variables.
- Items of questions that loaded similarly imply measurement along a similar factor. An examination of the content of items loading at or above 0.5 (and using the higher or highest loading in instances where items cross-loaded at greater than this value) was effectively measured along the various components.

It is noted that the variables in Section B, C and D of sample 1 loaded perfectly along one factor each. This means that the statements (i.e., variables) that constituted these

components perfectly measured the individual components. That is, the component measured what it was meant to measure.

Table 5.8: Component Matrix^a on sample 1 recruitment factors

Recruitment factors for sample 1	Component
	1
Teamwork	0.86
Participative decision making	0.86
Coaching & mentorship	0.85
Workplace communication	0.85
Additional benefits packages	0.85
Career development	0.85
Resources	0.85
Work environment	0.84
Training & education	0.84
Equal employment opportunities	0.83
EMS management	0.82
Recreational facilities	0.82
Safety & security	0.81
Paid time off	0.81
Promotion opportunities	0.81
Job stability	0.81
Remuneration	0.77

Extraction method: Principle Component Analysis (^a= Components extracted)

Table 5.9: Component Matrix^a on sample 1 retention factors

Retention factors for sample 1	Component
	1
Resources	0.87
Participative decision making	0.87
Training & education	0.85
Safety & security	0.85
Career development	0.85
Remuneration	0.85
EMS management	0.84
Work environment	0.84
Job stability	0.84
Additional benefits package	0.77
Crime rate in South African drops	0.74
Hours of work	0.72

Extraction method: Principle Component Analysis (^a= Components extracted)

Table 5.10: Component Matrix^a on sample 1 motivation factors

Motivation factors for sample 1	Component
	1
Resources	0.90
Teamwork	0.89
Workplace communication	0.88
Coaching & mentorship	0.88
Safety & security	0.87
Job stability	0.86
Work environment	0.85
Training & education	0.85
EMS management	0.84
Remuneration	0.84
Participative decision making	0.84
Equal employment opportunities	0.83
Additional benefits packages	0.83
Career development	0.82
Paid time off	0.81
Recreational facilities	0.80
Hours of work	0.73

Extraction method: Principle Component Analysis (^a= Components extracted)

5.1.2.2 Section analysis of sample 1

On the five-point Likert scale, levels of disagreement (i.e., negative statements) were collapsed to show a single category of “Disagree”. A similar procedure was followed for the levels of agreement (i.e., positive statements). This was allowed due to the acceptable levels of reliability.

Section B: Recruitment factors for sample 1

Table 5.11: Percentages of agreement regarding recruitment factors for sample 1

Recruitment factors for sample 1	Work in SA			Work outside of SA			Work both in and outside of SA		
	Agree	Neutral	Disagree	Agree	Neutral	Disagree	Agree	Neutral	Disagree
Remuneration	95.2	2.1	2.7	93.2	2.7	4.1	79.3	6.9	13.7
Safety & security	94.9	2.8	2.4	91.9	5.0	3.2	82.8	6.9	10.3
Work environment	95.4	2.5	2.1	94.6	3.2	2.3	86.2	6.9	6.9
EMS management	92.9	5.0	2.9	89.1	8.1	2.8	72.4	13.8	13.7
Resources	96.1	2.2	1.7	91.8	6.3	1.8	82.7	10.3	6.9
Teamwork	94.3	4.2	1.5	93.2	5.4	1.4	86.2	6.9	6.9
Workplace communication	94.3	3.3	2.0	92.3	5.4	2.3	75.9	13.8	10.3
Promotion opportunities	95.4	3.0	1.6	95.5	2.7	1.9	72.4	13.8	13.7
Additional benefits package	94.4	3.5	2.0	93.7	5.0	1.4	75.9	13.8	10.3
Participative decision making	94.1	3.7	2.2	95.0	3.6	1.4	89.6	3.4	6.9
Job stability	97.1	2.2	0.7	96.0	2.7	1.4	89.6	10.7	10.7
Career development	97.0	1.7	1.3	86.9	1.4	1.4	86.2	6.9	6.9
Coaching & mentorship	94.5	4.0	1.4	96.3	10.9	2.3	79.3	13.8	6.9
Training & education	97.0	2.0	1.1	86.9	2.3	1.4	89.6	3.4	6.8
Paid time off	92.8	5.5	1.7	80.1	11.3	1.8	62.0	27.6	10.3
Recreational facilities	88.9	7.0	4.2	94.1	15.8	4.1	68.9	17.2	13.7
Equal employment opportunities	93.5	4.2	2.3	94.1	3.6	2.3	86.2	6.9	6.9

Section B of sample 1 questionnaire required participants to select their level of agreement with ALS practitioner recruitment factors, based on the designed five-point Likert scale (Table 5.11). The responses from the participants were further divided into subgroups based on their current location of work, namely, in SA, outside of SA or both in and outside of SA. There was a high level of agreement in all three subgroups which

indicated that these recruitment factors were essential to recruiting ALS practitioners to EMS organisations in SA.

The mean values were low (between one and two) which corresponds to levels of agreement. Figure 5.2 shows that there are high levels of agreement for the recruitment factors.

The One-Sample Kolmogorov-Smirnov Test was used to determine whether the distributions were normally distributed. None of the statements were normal, hence the Medians Test was used to determine whether differences between the groups were significant.

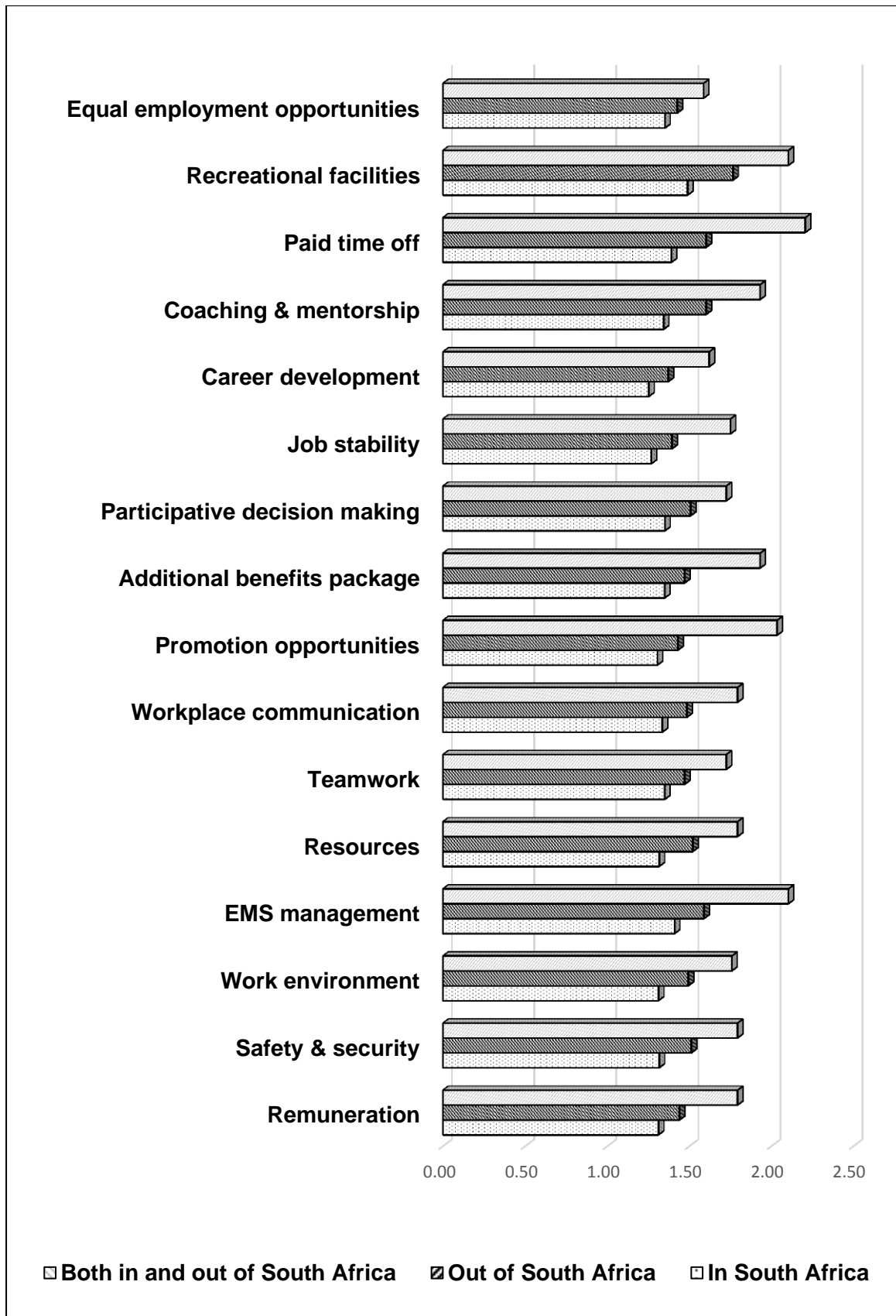


Figure 5.2: Mean scores distribution of recruitment factors for sample

Section C: Retention factors for sample 1

Table 5.12: Percentages of agreement regarding retention factors for sample 1

Retention factors for sample 1	Work in SA			Work outside of SA			Work both in and outside of SA		
	Agree	Neutral	Disagree	Agree	Neutral	Disagree	Agree	Neutral	Disagree
Remuneration	95.0	3.3	1.6	92.3	6.8	0.9	79.3	10.3	10.3
Work environment	96.0	2.4	1.6	92.3	6.3	1.4	89.7	3.4	6.9
EMS management	96.3	2.2	1.5	94.1	5.0	0.9	86.2	6.9	6.9
Resources	95.8	1.9	2.4	94.5	5.0	0.5	86.2	3.4	10.3
Participative decision making	96.5	2.0	1.5	96.8	2.7	0.5	79.3	6.9	13.7
Job stability	97.9	1.7	0.4	94.1	5.0	0.9	86.2	6.9	6.8
Emergency medical dispatch	97.5	1.9	0.7	95.0	4.1	0.9	86.2	6.9	6.8
Training & education	96.5	1.8	1.7	97.2	2.3	0.5	79.3	10.3	10.3
Career development	94.8	3.1	2.1	93.7	5.4	0.9	86.2	6.9	6.9
Additional benefits package	95.8	2.4	1.8	95.1	3.6	1.4	93.1	3.4	3.4
Hours of work	90.0	6.8	3.2	88.7	8.1	3.2	62.0	24.1	13.7
Safety and security	95.4	2.5	2.1	97.3	1.4	1.4	86.2	0.0	13.7

Section C of sample 1 questionnaire required participants to select their percentages of agreement with ALS practitioner retention factors based on the five-point Likert scale (Table 5.12). The response of the participants were further divided into subgroups, based on their current location of work including; in SA, outside of SA and both in and outside of SA. There was a high level of agreement in all three subgroups reflecting that these retention factors are essential in order to retain ALS practitioners in EMS organisations in SA.

Table 5.13: Mean scores of retention factors for sample 1

	Work in SA	Work outside of SA	Work both in and outside of SA
Remuneration	1.298	1.398	1.897
Safety and security	1.313	1.452	1.931
Work environment	1.294	1.525	1.828
EMS management	1.253	1.394	1.655
Resources	1.304	1.434	1.897
Participative decision making	1.271	1.371	1.931
Job stability	1.237	1.421	1.724
Emergency medical dispatch	1.247	1.394	1.724
Training & education	1.258	1.321	1.793
Career development	1.317	1.452	1.724
Additional benefits package	1.289	1.403	1.586
Hours of work	1.410	1.466	2.103

The mean values are low (between one and two) which corresponds to percentage of agreement (Table 5.13). An inspection of the percentage table also indicates high levels of agreement for the retention factors.

The One-Sample Kolmogorov-Smirnov Test was used to determine whether the distributions of retention factors were normally distributed. None of the statements were normal, hence the Medians Test was used to determine whether differences between the groups were significant (Figure 5.3). The median differences were significant ($p < 0.05$).

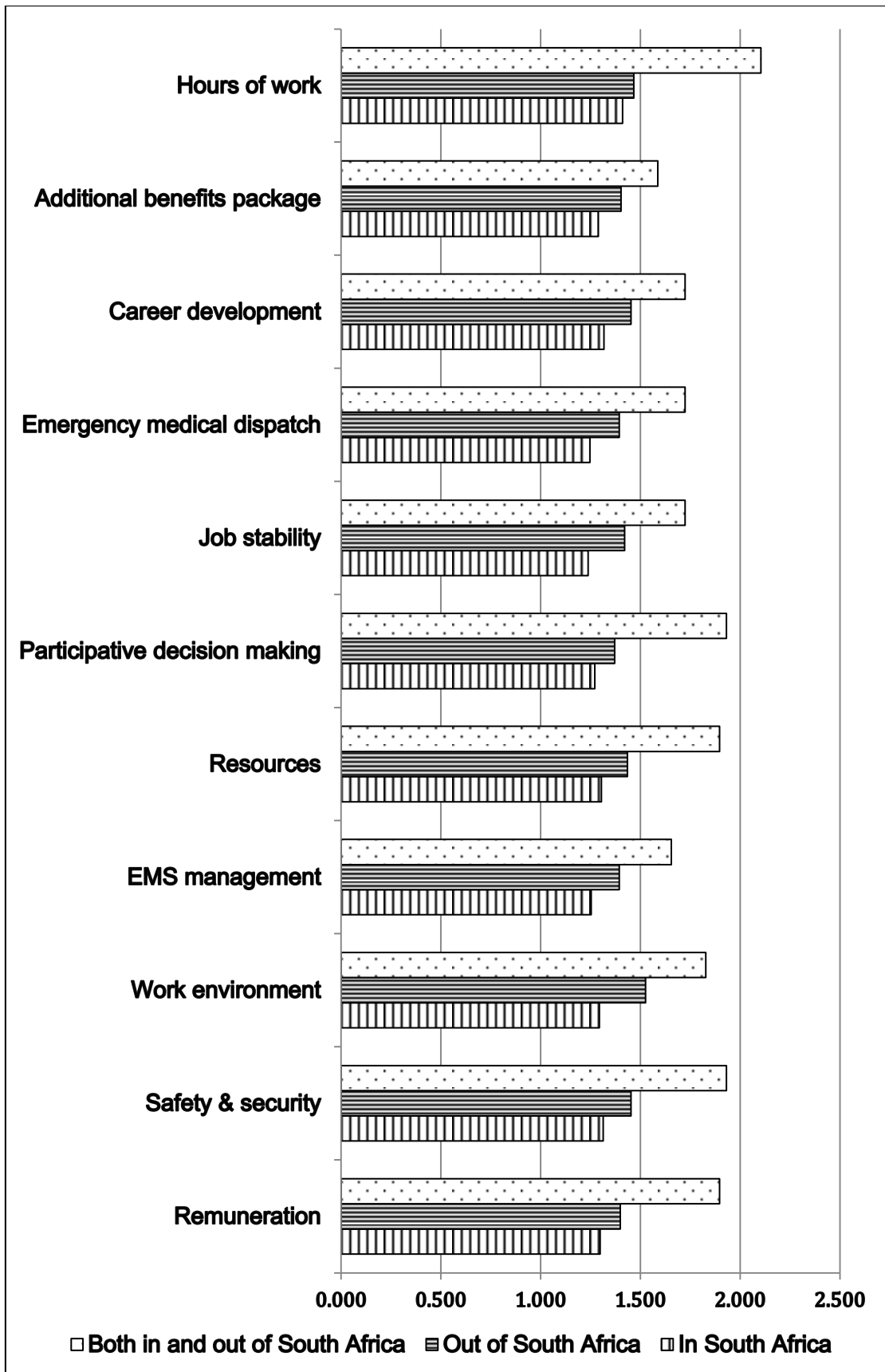


Figure 5.3: Mean scores distribution of retention factors for sample 1

Section D: Motivation factors for sample 1

Table 5.14: Percentages of agreement regarding motivation factors for sample 1

Motivation factors for sample 1	Work in SA			Work outside of SA			Work both in and outside of SA		
	Agree	Neutral	Disagree	Agree	Neutral	Disagree	Agree	Neutral	Disagree
Remuneration	96.9	2.1	1.1	93.3	5.4	1.4	75.9	13.8	10.4
Safety & security	96.8	1.7	1.4	94.5	3.2	2.3	82.8	6.9	10.4
Work environment	95.6	3.4	0.9	92.7	4.9	2.2	79.2	6.9	13.8
EMS management	96.7	2.0	1.0	95.8	2.7	1.3	86.1	3.4	10.3
Resources	97.1	1.8	0.8	96.3	2.2	1.3	86.2	6.9	10.3
Teamwork	97.0	2.0	0.8	97.2	1.3	1.3	82.7	6.9	10.3
Workplace communication	97.3	1.7	0.8	94.1	4.5	1.3	89.5	0.0	10.3
Participative decision making	97.7	1.1	1.0	98.5	0.9	0.4	86.1	3.4	10.3
Career development	97.4	2.0	0.4	97.2	1.8	0.4	79.2	6.9	13.7
Additional benefits package	96.5	2.5	0.7	96.3	3.1	0.4	82.6	3.4	13.7
Paid time off	97.5	2.1	0.2	96.7	2.2	0.9	82.7	10.3	6.9
Job stability	97.0	2.4	0.3	91.4	6.3	2.2	86.2	6.9	6.8
Coaching & mentorship	97.0	2.4	0.4	94.0	4.9	0.9	86.1	6.9	6.8
Hours of work	92.5	6.2	1.0	86.8	11.3	1.7	82.7	10.3	6.9
Equal employment opportunities	95.3	3.5	1.0	92.7	6.3	0.9	82.6	6.9	10.3

Section D of sample 1 questionnaire required the participants to select a response with regards to ALS practitioner motivation factors that were based on the designed five-point Likert scale (Table 5.14). The response of the participants were further divided into subgroups based on their current location of work including, in SA, outside of SA or both in and outside of SA. There was a high level of agreement in all three subgroups indicating that these motivation factors were essential in order to motivate ALS practitioners in EMS organisations in SA.

In addition, the mean values were found to be low (between one and two) which corresponded with their levels of agreement (Figure 5.4).

The One-Sample Kolmogorov-Smirnov Test was used to determine whether the distributions were normal (Table 5.15). None of the statements were normal, hence the Medians Test was used to determine whether differences between the groups were significant.

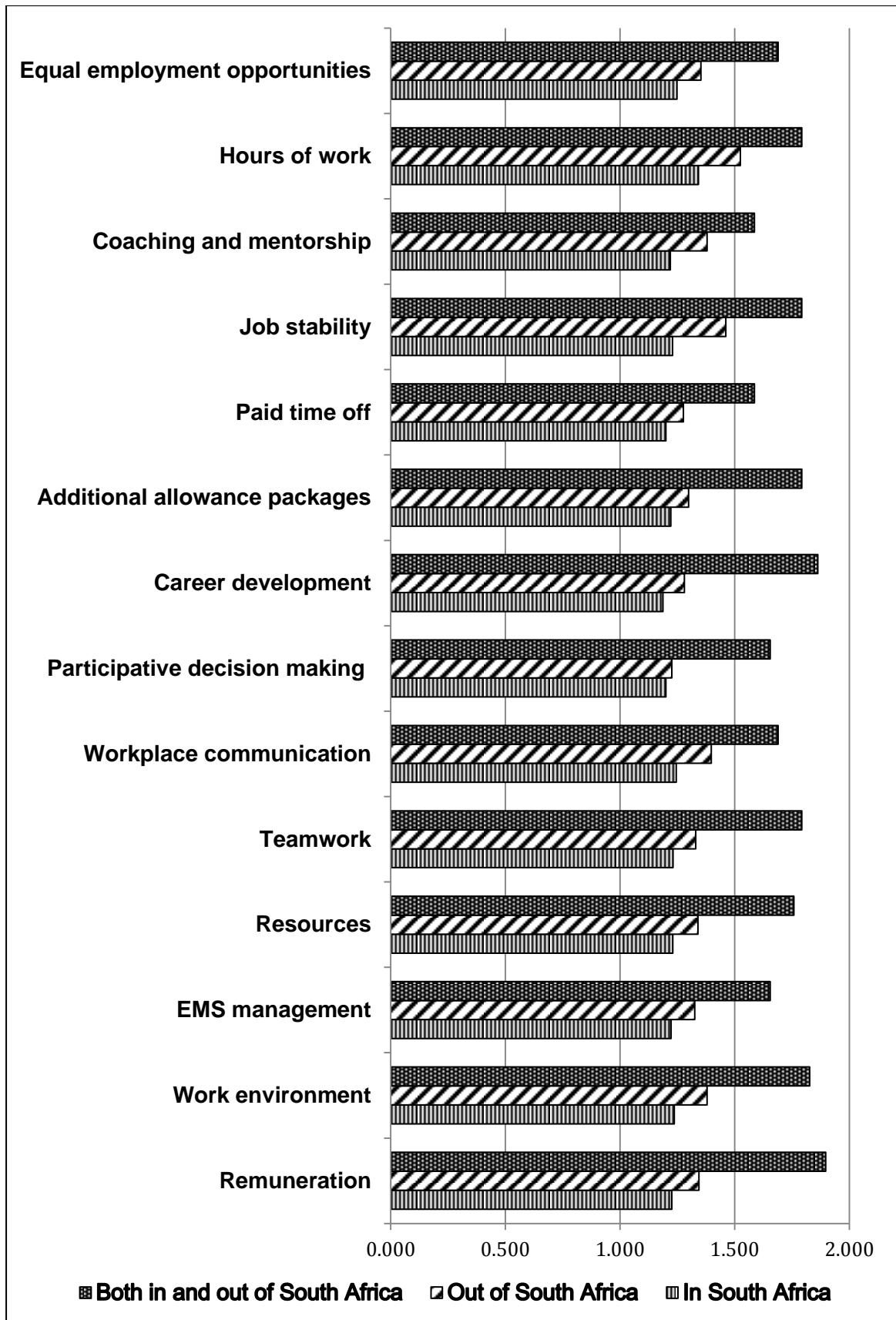


Figure 5.4: Mean scores distribution of motivation factors for sample 1

Table 5.15: The One-Sample Kolmogorov-Smirnov test for motivation factors for sample 1

	N	Median	Chi-Square	df	Asymp. Sig.
Remuneration	1300	1.000	26.776	2	0.000
Safety & security	1300	1.000	29.627	2	0.000
Work environment	1300	1.000	42.490	2	0.000
EMS management	1300	1.000	16.725	2	0.000
Resources	1300	1.000	20.808	2	0.000
Teamwork	1300	1.000	23.428	2	0.000
Workplace communication	1300	1.000	22.285	2	0.000
Participative decision making	1300	1.000	11.118	2	0.004
Career development	1300	1.000	33.189	2	0.000
Additional benefits package	1300	1.000	20.006	2	0.000
Paid time off	1300	1.000	10.072	2	0.006
Job stability	1300	1.000	43.971	2	0.000
Coaching & mentorship	1300	1.000	21.491	2	0.000
Hours of work	1300	1.000	23.108	2	0.000
Equal employment opportunities	1300	1.000	13.282	2	0.001

All medians were significantly different. The Mann-Whitney U Test showed similar significant differences between the participants working outside of SA and those working both in and outside of SA groups for all statements, except for “Participative decision making” (p=0.126).

5.1.2.3 Hypothesis testing

Pearson’s chi squared tests were done to determine relationships between the nominal and ordinal variables for sample 1 data. The tests were done using an alpha of 0.05. In most instances p was <0.05, indicating a significant relationship between the variables. Chi squared tests which yielded a p-value of less than 0.05 are discussed in chapter 6.

5.1.2.4 Correlations

Bivariate correlations were also performed on the ordinal data for sample 1. Correlations were done using Spearman's correlation coefficient for the entire group of variables including; ALS practitioner recruitment, retention and motivation factors independent of location. Positive correlation values indicate a directly proportional relationship between the dependent and the independent variables. A "+1" indicates a "perfect positive correlation" implying that a change in the independent variable will result in an identical change in the dependent item. A "-1" indicates a "perfect negative correlation" implying that changes will be identical with the independent and dependent variables but in the opposite direction. All significant relationships are indicated by a * or **. The correlation coefficient for all dependent and independent variables are positive, highlighting a "perfect positive correlation" between the variables.

5.1.3 Summary of findings for sample 1

More White ALS practitioners work in SA, out of SA and both in and out of SA as compared to the other racial groups. Comparatively fewer Black qualified ALS practitioners work outside of SA. Three quarters of all SA qualified ALS practitioners were male. Fewer CCA qualified ALS practitioners work outside the country as compared to the other ALS trained personnel. More practitioners working outside the country obtained additional EMC qualifications with ACLS and PALS among the most common choices.

More than 42% of sample 1 participants were trained in the KwaZulu-Natal province. Moreover, the provinces that have ALS training sites employ the largest numbers of these practitioners. Years of ALS experience amongst sample 1 participants ranged from one to 30, and they had experience in various EMC disciplines. Almost one in five participants in sample 1 work outside SA in one of 46 countries. Africa, the Middle East and Australia were the most popular regions.

ALS practitioners agreed that they were affected by the listed recruitment, retention and motivation factors. This was evident by the high level of scoring, the low mean values and the level of significance (p-values <0.05).

5.2 EMS manager participant results (sample 2)

The questionnaire completed by EMS managers consisted of 97 items, with a level of measurement at a nominal, ordinal or scale level. One hundred and seventeen ALS EMS providers were registered with the BHF in 2012. Managers of 60 of these EMS organisations participated in phase one of the study, a 51% response rate.

5.2.1 Section A: Demographic data of sample 2

5.2.1.1 Racial distribution, gender and age

Sample 2 was comprised of 60% (n=36) White, 18.3% (n=11) Black, 16.7% (n=10) Indian and 5.0% (n=3) Coloureds. Nearly all respondents were male (96.7%; n=58). Thirty percent (n=18) of sample 2 were older than 30 but less than 40 years old, 65.0% (n=39) were older than 40 but less than 50 years old and 5.0% (n=3) were older than 50 but less than 60 years.

5.2.1.2 Highest education and EMC qualifications

Half of sample 2 (50.0%; n=30) had a tertiary qualification, whilst 48.3% (n=29) had a school leaving matric/grade twelve education and 1.7% (n=1) only had a secondary school education. The highest EMC qualifications obtained were: 51.7% (n=31) CCA, 33.3% (n=20) NDEMC, 8.3% (n=5) BTEMC, 5.0% (n=3) held an AEA qualification and 1.7% (n=1) held a degree as a medical doctor.

Most (83.3%; n=50) indicated that they were in possession of other qualifications. Only 52.0% (n=26) had a general management qualification, 12% (n=6) held a disaster management and occupational health and safety qualification and 10.0% (n=5) had a human resource management qualification. Few EMS manager participants were found to have a general law (8.0%), project management (2.0%), education (2.0%) or labour relations (2.0%) related qualifications.

5.2.1.3 Geographical operational areas of EMS organisation

More than a quarter (28.3%; n=17) of the participants were situated in Gauteng, 21.7% (n=13) in KwaZulu-Natal, 15.0% (n=9) in the Western Cape, 10.0% (n=6) in the Eastern Cape, 8.3% (n=5) each in the North West and Limpopo, 3.3% (n=2) each in the Free

State and Mpumalanga and 1.7% (n=1) in the Northern Cape. Only 5.0% (n=3) of these EMS have national operations and 6.7% (n=4) international.

The number of ALS practitioners employed by EMS organisations represented through this sample ranged from one to 177 (M= 11.6, SD= 29.3).

5.2.1.4 ALS duties conducted by sample 2 EMS organisations

Managers of EMS organisations were requested to choose different ALS duties listed, that were conducted by their organisation. They were allowed to choose multiple options. The ALS duties selected included operations (98.3%), standby at special events (98.3%), management (63.3%), disaster management (45.0%), education (40.0%), aeromedical services (16.7%), medical rescue (15%), public relations/media liaison (8.3%), communication (3.3%) and remote site medicine (1.7%).

5.2.1.5 ALS practitioner turnover and vacancy rates within sample 2 EMS organisations

More than three quarters (78.3%; n=47) reported an average ALS practitioner turnover rate of less than 10% while 18.3% (n=11) reported a turnover rate between 10-20%.

Most (76.7%; n=46) had an average ALS practitioner vacancy rate of less than 10%, 16.7% (n=10) reported a 10-20% vacancy rate, 1.7% (n=1) a 21-30% vacancy rate and 5.0% (n=3) reported more than 50% vacancy rate.

The EMS managers identified more than one reason for their ALS practitioner vacancy rates. Eighty-five percent (n=51) were unable to attract available ALS practitioners to their organisations, 81.7% (n=49) identified the lack of ALS practitioners as a source of the problem, 76.7% (n=46) identified that their organisation was unable to retain ALS practitioners, 63.3% (n=38) had budgetary constraints and 18.3% (n=11) identified poor organisational motivational strategies for ALS practitioners.

5.2.2 Reliability statistics for sample 2

The overall reliability score of 0.99 is high, implying a high level of consistent scoring by respondents. Individual sections also have high reliability scores. The scores were achieved using all of the factors that contributed to each component (i.e., categories).

5.2.2.1 Factor analysis for sample 2

As earlier, the results of Kaiser-Meyer-Olkin and Bartlett's Tests which measure the strength of the relationship between variables ensured that the required conditions were satisfied which allows for the factor analysis procedure. The rotated component matrices are shown below.

With reference to Tables 5.16, 5.17 and 5.18:

- The principle component analysis was used as the extraction method, and the rotation method was Varimax with Kaiser Normalisation. This is an orthogonal rotation method that minimises the number of variables that have high loadings on each factor. It simplifies the interpretation of the factors.
- Factor analysis/loading shows inter-correlations between variables.
- Items of questions that loaded similarly imply measurement along a similar factor. An examination of the content of items loading at or above 0.5 (and using the higher or highest loading in instances where items cross-loaded at greater than this value) effectively measured along the various components.

It is noted that the variables in Section B, C and D of sample 2 loaded along two and three factors. This means that the statements (i.e., variables) that constituted these components perfectly measured the individual components. That is, the component measured what it was meant to measure.

Section B: Recruitment factors for sample 1 identified by sample 2

Table 5.16: Component Matrix^a on sample 2 regarding recruitment factors for sample 1

Recruitment factors for sample 1	Component		
	1	2	3
Remuneration	0.11	0.38	0.66
Safety & security	0.24	0.64	0.55
Work environment	0.35	0.87	0.29
EMS management	0.36	0.77	0.42
Resources	0.75	0.62	0.11
Teamwork	0.77	0.45	0.34
Workplace communication	0.73	0.56	0.25
Promotion opportunities	0.64	0.31	0.51
Additional benefits package	0.86	0.01	0.20
Participative decision making	0.73	0.48	0.39
Job stability	0.55	0.29	0.65
Employee recognition	0.27	0.76	0.46
Career development	0.33	0.71	0.51
Coaching & mentorship	0.33	0.71	0.51
Paid time off	0.35	0.35	0.69
Training & education	0.29	0.20	0.86
Recreational facilities	0.72	0.34	0.43
Equal employment opportunities	0.73	0.48	0.27

Extraction Method: Principle Component Analysis

Rotation Method: Varimax with Kaiser Normalization

a. Rotation converged in three iterations

Section C: Retention factors for sample 1 identified by sample 2

Table 5.17: Component Matrix^a of sample 2 regarding retention factors for sample 1

Retention factors for sample 1	Component	
	1	2
Remuneration	0.00	0.82
Safety & security	0.72	0.36
Work environment	0.83	0.34
EMS management	0.82	0.33
Resources	0.88	0.34
Teamwork	0.86	0.38
Workplace communication	0.91	0.33
Promotion opportunities	0.85	0.18
Additional benefits package	0.57	0.44
Participative decision making	0.82	0.23
Job stability	0.87	0.34
Employee recognition	0.48	0.82
Career development	0.86	0.34
Coaching & mentorship	0.91	0.35
Training & education	0.89	0.32
Paid time off	0.85	0.22
Recreational facilities	0.41	0.73
Equal employment opportunities	0.62	0.69

Extraction Method: Principle Component Analysis

Rotation Method: Varimax with Kaiser Normalization

a. Rotation converged in three iterations

Section D: Motivation factors for sample 1 identified by sample 2

Table 5.18: Component Matrix^a of sample 2 regarding motivation factors for sample 1

Motivation factors for sample 1	Component		
	1	2	3
Remuneration	0.07	0.95	0.010
Safety & security	0.24	0.85	0.36
Work environment	0.59	0.70	0.31
EMS management	0.66	0.70	0.21
Resources	0.77	0.25	0.53
Teamwork	0.45	0.73	0.49
Workplace communication	0.52	0.64	0.48
Career development	0.78	0.20	0.54
Additional benefits package	0.88	0.26	0.10
Participative decision making	0.53	0.09	0.78
Paid time off	0.84	0.32	0.29
Employee recognition	0.67	0.23	0.57
Job stability	0.28	0.30	0.79
Coaching and mentorship	0.19	0.23	0.87
Training & education	0.22	0.22	0.89
Recreational facilities	0.63	0.55	0.30
Hours of work	0.74	0.13	0.44
Equal employment opportunities	0.58	0.64	0.45

Extraction Method: Principle Component Analysis

Rotation Method: Varimax with Kaiser Normalization

a. Rotation converged in three iterations

It is noted that the matrices split into two or three components. This implies that respondents identified sub-categories within the major categories. Among the reasons for the splits is that the construct is newly constructed. The sub-categories included the work environment, the employment package and professional development.

5.2.2.2 Section Analysis of sample 2

In the five-point Likert scale levels of disagreement (negative statements) were collapsed to show a single category of “Disagree”. A similar procedure was followed for the levels of agreement (positive statements). This is allowed due to the acceptable levels of reliability.

Section B: Recruitment factors for sample 1 identified by sample 2

Section B of the EMS manager questionnaire required that participants select their level of agreement with the ALS practitioner recruitment factors based on the designed five-point Likert scale (Table 5.19). There was a high level of agreement in this category reflecting that these recruitment factors are essential to attract ALS practitioners to EMS organisations in SA.

Table 5.19: Levels of agreement of sample 2 regarding recruitment factors for sample 1

Recruitment factors for sample 1	Agree	Neutral	Disagree
Remuneration	100	0.0	0.0
Safety & security	98.3	1.6	0.0
Work environment	93.2	5.0	1.6
EMS management	96.6	3.3	0.0
Resources	91.6	6.6	1.6
Teamwork	94.9	5.0	0.0
Workplace communication	96.6	3.3	0.0
Promotion opportunities	98.3	1.7	0.0
Additional benefits package	96.6	1.7	1.7
Participative decision making	100	0.0	0.0
Job stability	100	0.0	0.0
Employee recognition	98.3	1.7	0.0
Career development	100	0.0	0.0
Coaching & mentorship	100	0.0	0.0
Paid time off	93.4	6.7	0.0
Training & education	100	0.0	0.0
Recreational facilities	83.3	15.0	1.7
Equal employment opportunities	88.3	10.0	1.7

The average score for the level of agreement for this section is 95.7%. This indicates that EMS managers believe that most of the factors listed were important in attracting ALS practitioners to EMS organisations in SA.

Section C: Retention factors for sample 1 identified by sample 2

Section C of sample 2 questionnaire required the participants to select their level of agreement on ALS practitioner retention factors based on the designed five-point Likert scale (Table 5.20). There was a high level of agreement in this category denoting that these retention factors are essential to retain ALS practitioners in EMS organisations in SA.

Table 5.20: Levels of agreement of sample 2 regarding retention factors for sample 1

Retention factors for sample 1	Agree	Neutral	Disagree
Remuneration	96.6	1.7	1.7
Safety and security	98.4	1.7	0.0
Work environment	91.6	6.7	1.7
EMS management	95.0	3.3	1.7
Resources	96.7	3.3	0.0
Teamwork	95.0	5.0	0.0
Workplace communication	95.0	3.3	1.7
Promotion opportunities	86.6	1.7	1.7
Additional benefits package	93.3	3.3	3.4
Participative decision making	100	0.0	0.0
Job stability	98.3	1.7	0.0
Employee recognition	95.0	3.3	1.7
Career development	96.6	1.7	1.7
Coaching & mentorship	96.6	1.7	1.7
Training and education	96.6	1.7	1.7
Paid time off	93.3	5.0	1.7
Recreational facilities	83.3	11.7	5.0
Equal employment opportunities	93.3	3.3	3.4

The average level of agreement with statements from this section was 95.9%. The EMS managers are in general agreement that all of the statements would play a role in retaining ALS practitioners or encouraging them to return to the SA EMS industry.

Section D: Motivation factors for sample 1 identified by sample 2

Section D of the questionnaire also utilised a Likert scale design to enquire from sample 2 about different factors that could potentially motivate ALS practitioners in SA. There was a high level of agreement for most of the aspects outlined in Table 5.21 which found the various items to be crucial to ensuring that ALS practitioners remained motivated to work in SA.

Table 5.21: Levels of agreement of sample 2 regarding motivation factors for sample 1

Motivation factors for sample 1	Agree	Neutral	Disagree
Remuneration	98.3	0.0	1.7
Safety & security	96.7	3.3	0.0
Work environment	91.7	8.3	0.0
EMS management	93.3	6.7	0.0
Resources	96.7	3.3	0.0
Teamwork	95.0	5.0	0.0
Workplace communication	93.3	6.7	0.0
Career development	96.7	3.3	0.0
Additional benefits package	95.0	5.0	0.0
Participative decision making	98.3	1.7	0.0
Paid time off	93.3	6.7	0.0
Employee recognition	96.7	3.3	0.0
Job stability	98.3	1.7	0.0
Coaching and mentorship	93.3	6.7	0.0
Training & education	95.0	5.0	0.0
Recreational facilities	89.9	6.7	3.4
Hours of work	93.4	3.3	3.3
Equal employment opportunities	93.3	6.7	0.0

The average score for the option “Agree” was 94.8% indicating that these factors also play a role in terms of motivating ALS practitioners.

5.2.2.3 Hypothesis Testing

The Pearson’s chi squared tests were also completed for the data obtained from sample 2 questionnaires. The p-values less than 0.05 are discussed in chapter 6.

5.2.2.4 Correlations

Bivariate correlations were performed on the (ordinal) data. Correlations were done using Spearman’s correlation coefficient for the entire group of variables including ALS practitioner recruitment, retention and motivation factors independent of location. An

explanation of the interpretation was provided in section 5.1.2.4. All significant relationships are indicated by a * or **. The correlation coefficient for all dependent and independent variables are positive, highlighting a “perfect positive correlation” between the variables. The multivariate tests with Bonferroni correction showed no significant differences to the medians test results.

5.2.3 Summary of findings for sample 2

Sixty percent of the EMS managers were White and 18.3% Black. All but two were males. Only fifty percent of this sample had a tertiary qualification while more than fifty percent of the EMS managers had a CCA qualification. Only 52% of this sample was in possession of a management qualification.

EMS organisations in SA employed between one and 177 ALS practitioners. These practitioners performed various duties, including operations, special events, management, disaster management and education. Over 20% of EMS organisations had an ALS practitioner turnover rate of >10%. Over 20% of these organisations had an ALS vacancy rate of >10%. Commonly cited reasons for the vacancy rates included: inability to attract ALS practitioners, shortage of ALS practitioners, poor retention strategies, budgetary constraints and poor motivational strategies.

EMS managers agreed that the listed recruitment, retention and motivation factors were important to attracting, retaining and motivating ALS practitioners. This was evidenced by the high level of scoring, the low mean values and the level of significance (p-values <0.05).

5.4 Conclusion

This study found 19 recruitment, 25 retention and 16 motivation factors to affect ALS practitioners in SA. These factors highlighted the practitioners’ work environment, employment package and professional development. Remuneration, EMS management and resources were amongst the strongest factors influencing practitioner recruitment, retention and motivation.

Three quarters of the ALS practitioner sample was male; more males work outside the country. Fewer Blacks work outside the country. More ALS practitioners with tertiary qualifications choose to work outside the country. The four SA provinces where ALS

training institutions are situated employ more that eighty percent of ALS practitioners. Most practitioners in these provinces work in urban areas.

Practitioners were in agreement that the recruitment, retention and motivation factors which were identified significantly influenced ALS practitioner attraction, retention and motivation. These findings were corroborated by their EMS managers. Chapter six presents the qualitative data.

Chapter Six: Analysis of qualitative data

6.1 Introduction

Chapter five presented quantitative data collected from sample one and two. In this chapter qualitative data gathered from sample three and four of the study is presented. Seven focus groups were conducted with sample three (N=59). The number of participants per focus group ranged between four and twelve. These discussions were facilitated across different geographical regions viz. KwaZulu-Natal, Gauteng, Free State, Western Cape, Namibia and Kenya. Semi-structured interviews within sample four were conducted both in face-to-face settings and telephonically (N=6).

6.2. Demographic data of sample 3 and 4

6.2.1 Racial distribution, gender and age

The racial distribution of the 59 sample three participants was: 40.7% (n=24) White, 25.4% (n=15) Indian, 20.3% (n=12) Black and 13.6% (n=8) Coloured. For sample four, 33.3% (n=2) were White, 33.3% (n=2) Indian, 16.7% (n=1) Black and 16.7% (n=1) Coloured. The age range of sample three was 25-56 years (M= 36.6, SD= 7.1). Three-quarters (76.3%; n=45) of sample three were male while all sample four participants interviewed were male (100%).

6.2.2 Highest EMC qualifications

EMC qualifications of sample three participants included 49.2% (n=29) NDEMC, 25.4% (n=15) BTEMC, 15.3% (n=9) MTEMC, 8.5% (n=5) CCA and 1.7% (n=1) PhD. Sample four consisted of 50.0% (n=3) NDEMC, 33.3% (n=2) BTEMC and 16.7% (n=1) MTEMC graduates.

6.2.3 Years of EMC experience of sample 3

Sample three participants had the following years of experience: 28.8% (n=17) had six to ten years of experience, 25.4% (n=15) >20 years, 20.3% (n=12) had between eleven to 15 years, 15.3% (n=9) had between 16-20 years and 10.2% (n=6) had between one and five years EMC experience.

6.2.4 Geographical location of employment for sample 3

More than eighty percent (81.4%; n=48) of sample three worked in SA and 18.4% (n=11) worked outside of SA. Of the 48 ALS practitioners working in SA, 33.3% (n=16) were employed in KwaZulu-Natal, 27.0% (n=13) were employed in the Free State, 16.7% (n=8) in the Western Cape, 14.6% (n=7) in Gauteng and 2.1% (n=1) each from the Eastern Cape, Northern Cape, Mpumalanga and North West Province. Of the 11 ALS practitioner participants working outside the country, 55.0% (n=6) were employed in Namibia, 18.0% (n=2) in Kenya and 9.0% (n=1) employed in Qatar, Sierra Leone and Angola, respectively.

6.2.5 Sector and discipline of employment for sample 3

More than seventy percent (72.9%) of sample three was employed by public EMS. They undertook work in the following fields: education 50.8% (n=30), operations 32.2% (n=19), management 10.2% (n=6), remote site medicine 5.1% (n=3) and special events 1.7% (n=1).

6.2.6 Summary of categories related to ALS practitioner recruitment

Data from sample three and four reflected 19 primary categories related to ALS practitioner recruitment. These categories were further reduced into three main categories *viz.* the work environment, the employment package and professional development. This is reflected in Figure 6.1. The participants indicated that they would first enquire about the organisation and its practices (e.g., the work environment) before making a decision to apply for a vacancy. These practitioners then claimed that they would scrutinise the employment package before professional development opportunities were explored. Discussions of the categories follow below. Figure 6.2, below highlights the frequency of comments related to ALS practitioner recruitment.

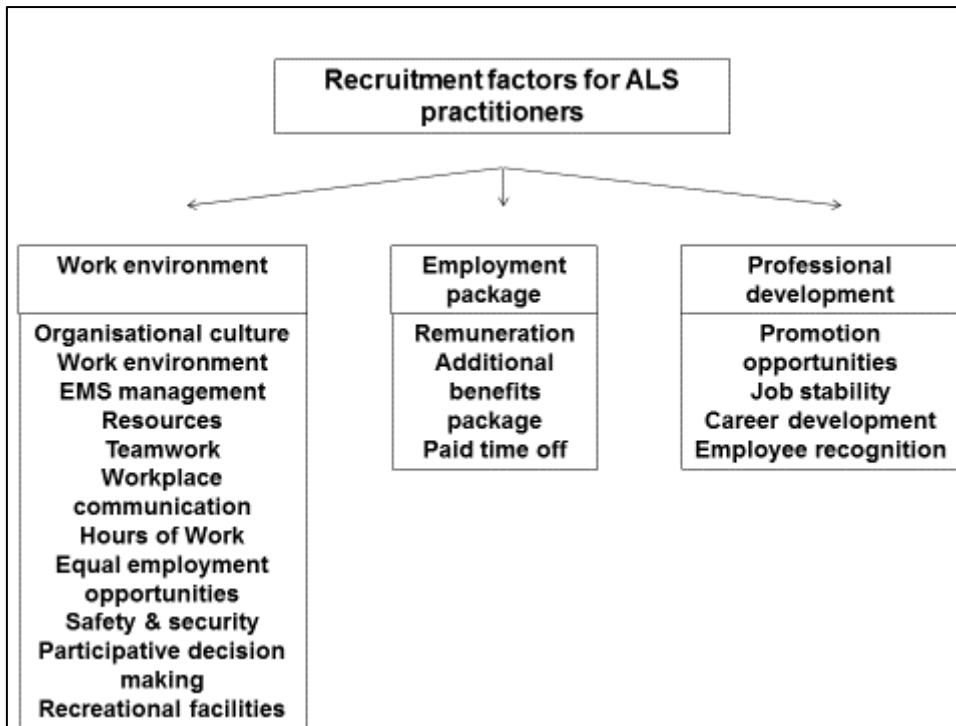


Figure 6.1: Categories related to ALS practitioner recruitment

ALS practitioner remuneration was most popular as it attracted much discussion from sample three and four. Skilled EMS management, organisational culture, coaching and mentorship and resources were also considered strong factors that contributed to ALS practitioner recruitment.

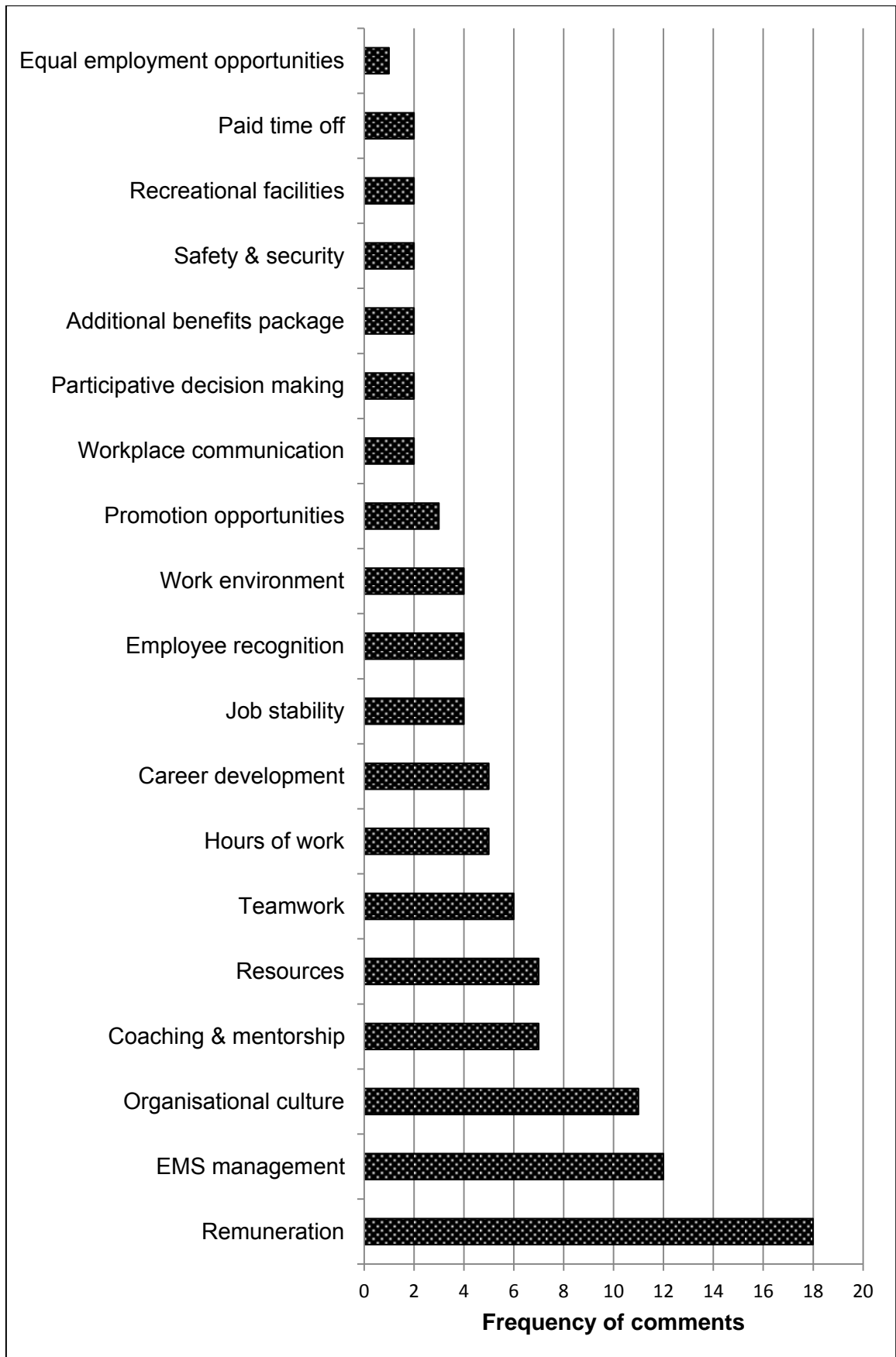


Figure 6.2: Frequency of comments related to ALS practitioner recruitment
145

6.2.7 Summary of categories related to ALS practitioner retention

Data from sample three and four reflected 25 categories related to issues of retention. These categories were collapsed further into three main categories *viz.* the work environment, the employment package and professional development (Figure 6.3). Figure 6.4 highlights the frequency of comments related to ALS practitioner retention.

Skilled EMS management, ALS practitioner remuneration, resources, ALS practitioner health and wellness, employee recognition and work environment were considered strong retention factors for ALS practitioners. Discussions related to these ALS practitioner retention factors attracted sturdy input from samples three and four.

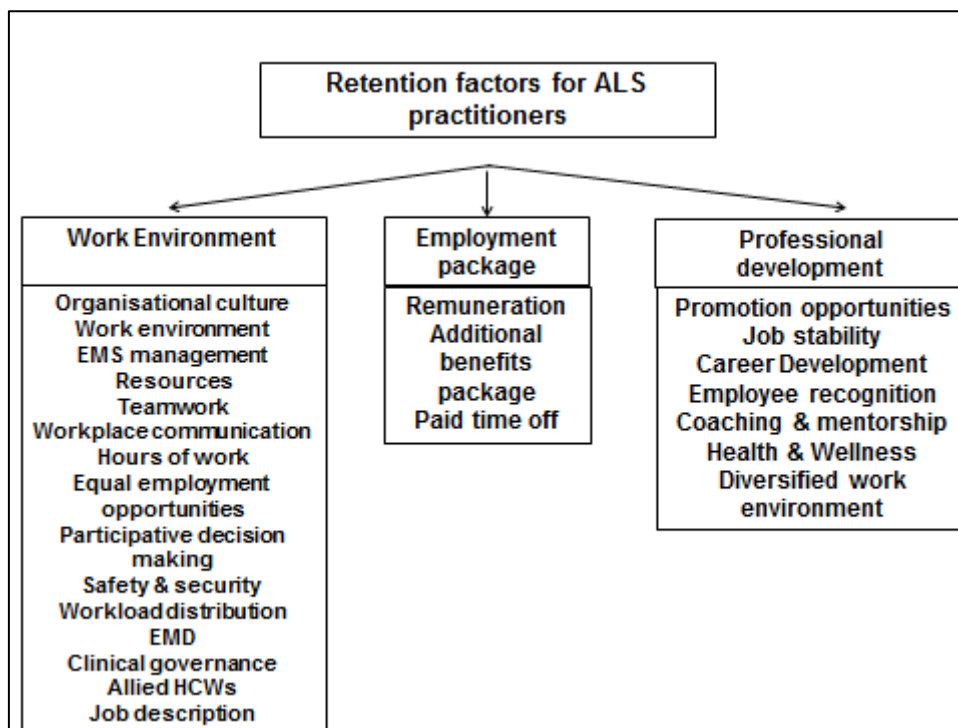


Figure 6.3: Categories related to the retention of ALS practitioners

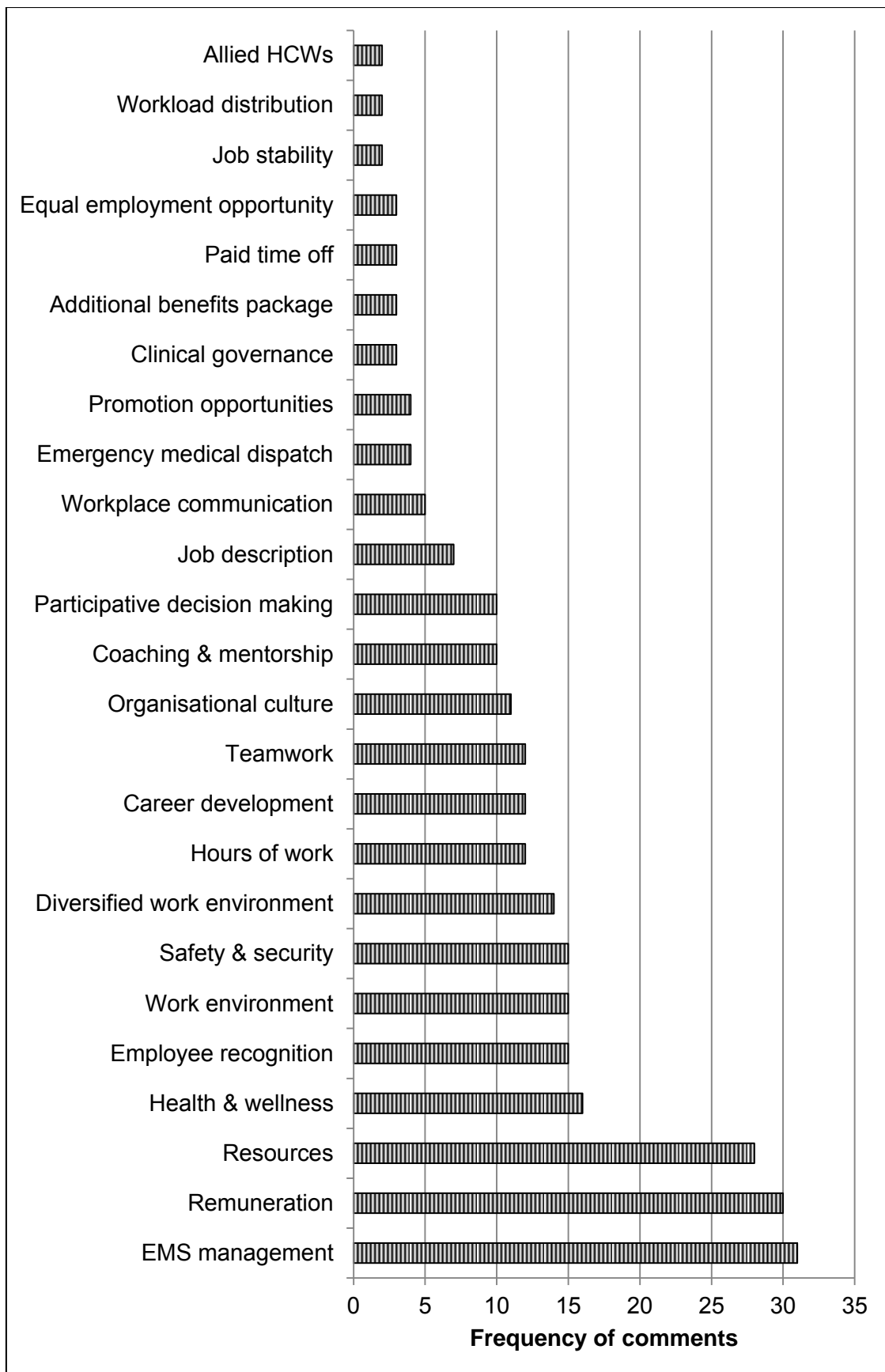


Figure 6.4: Frequency of comments related to ALS practitioner retention

6.2.8 Summary of categories related to ALS practitioner motivation

Samples three and four commented on 16 categories related to ALS practitioner motivation (Figure 6.5). These categories were then characterized as the work environment, employment package and professional development. Figure 6.6 highlights the frequency of comments related to ALS practitioner motivation.

ALS practitioner remuneration, skilled EMS management, resources and employee recognition attracted strong discussions as factors affecting these practitioners' motivation.

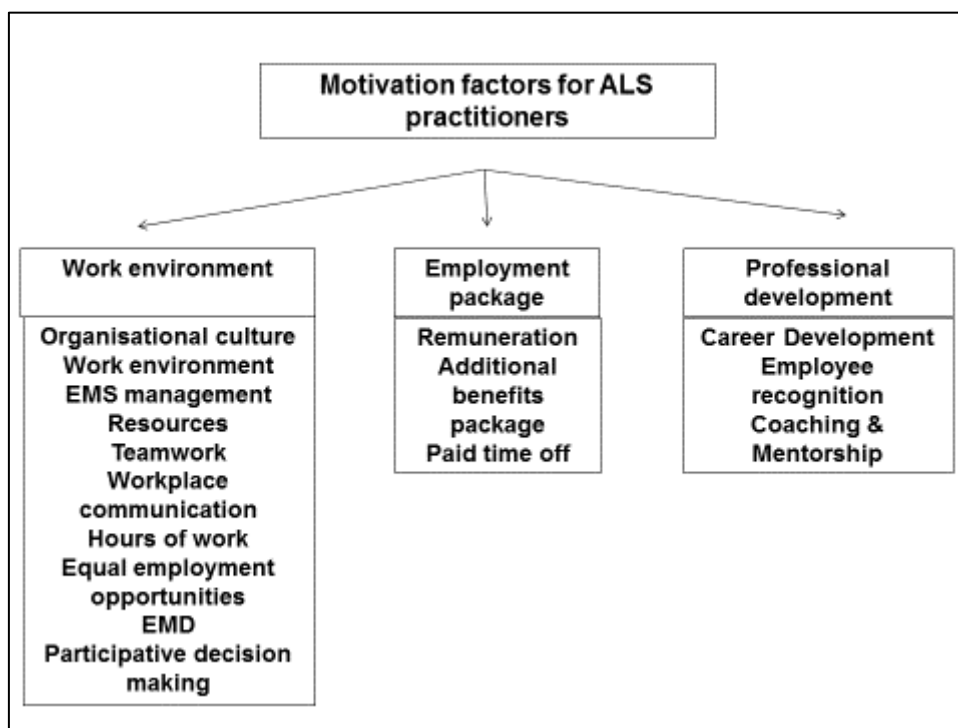


Figure 6.5: Categories related to the motivation of ALS practitioners

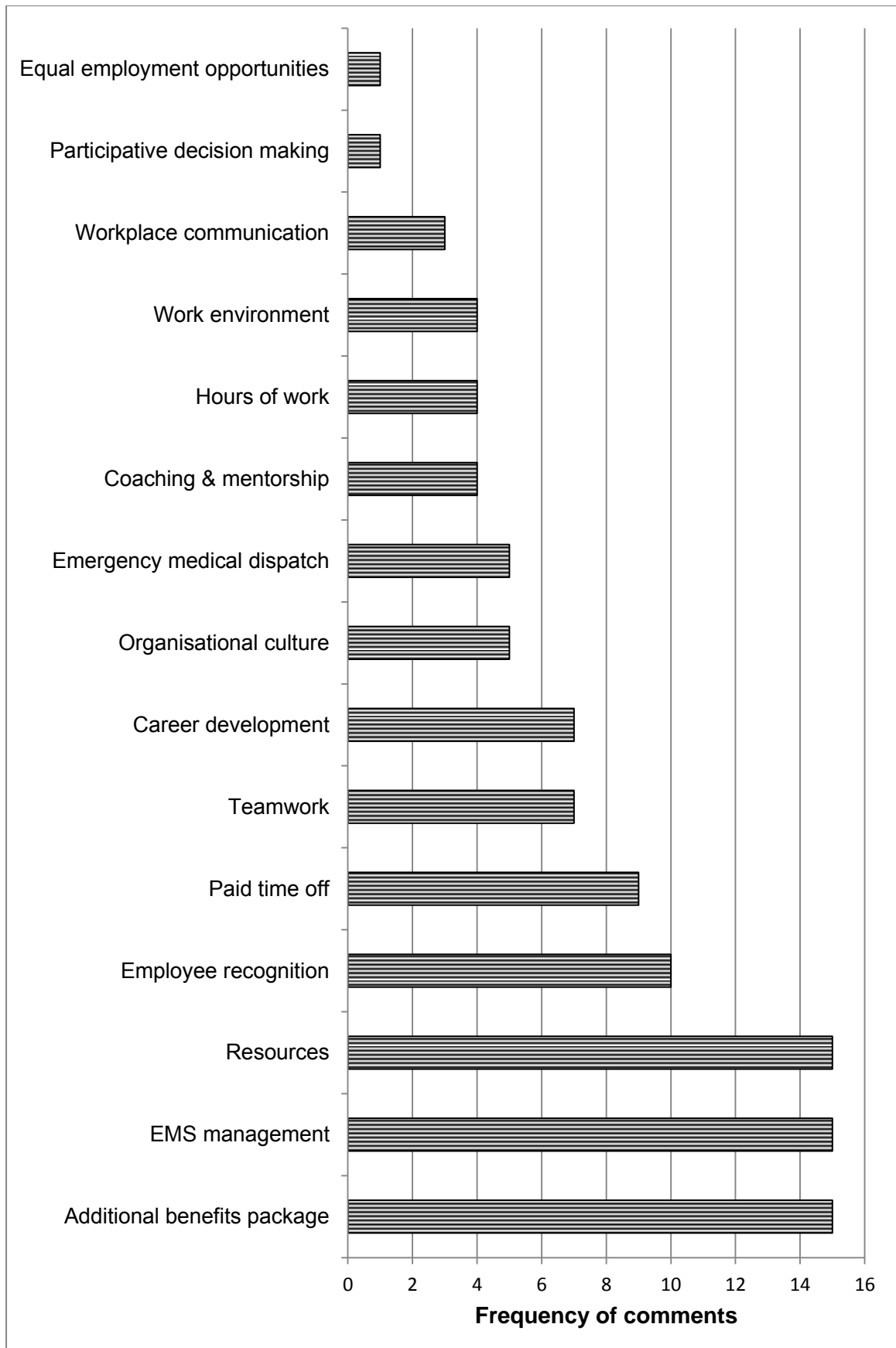


Figure 6.6: Frequency of comments related to ALS practitioner motivation
149

6.3 Categories related to ALS practitioner recruitment, retention and motivation

6.3.1 Organisational culture

Participants expressed that they wanted to work for a progressive organisation that displayed a strong mission and vision, a company that subscribed to ethical business practices and an organisation that was employee-centred. However, many participants stated that based on their experiences, several organisations in the EMS industry did not subscribe to best business practices and lacked an organisational culture that was conducive to attracting, retaining and motivating ALS practitioners. The business model of the private sector EMS and the *laissez-faire* approach by the government sector EMS was not conducive to the retention of ALS practitioners.

“...It requires a systems thinking and complete policy overall, right from the minister of health... a distinct career path, a distinct remuneration clear guideline about where you can go and how you can interact with other healthcare professionals and work in hospitals and whatever else, how to stimulate people. The experience between the professional, international, good quality, top companies versus the local experience, was that the systems aren't in place.... So there's no inspirational person, there's no policy that is driven to say well we understand that this is bad, but this is where we going to go...the trend is a decay, an attrition of those standards, rather than any improvement whatsoever. And people have lost the pride and all of that and the belief that things can change. It's very somber...”

“...the biggest problems in the organisations that we work for is that very rare, there isn't proper policies and procedures in place...no accountability...An organisation should have multiple SOPs in place to make sure that things run smoothly...”

“...why I would want to join a particular service, be it private or public, is the work ethic, and I would want to join a service that is patient-centred rather than financially driven”.

6.3.2 Work environment

The working conditions of the various EMS and how it affected participant's attraction, retention and motivation was discussed in the groups. Unhygienic and unsafe working conditions drew ALS practitioners away from such working environments. Participants commented in particular on the extreme working conditions they were exposed too.

“...the health factor, because I worked in a base where it was flea infested...and also the whole base was not conducive to any kind of social or teaching or any kind of environment...there was like one couch and a 2 metre space where you could move. Not all the crews could sit in there. There was a cable spaghetti in the middle and they hit a light quite regularly, because the charging things didn't work. It sounds silly now, but it was a time, but we got really frustrated, because we thought are in a system we have to look after health and safety and it was really nothing to look after our wellbeing.”

“...looking at the occupational health and safety...Look at the environment that we work in; working in South Africa is really dangerous, so looking at ways to improve the working environment, everyone has to – we have to work the long hours”

“...If you are looking at that base you will just go and look for the filthiest most underdog place that you can, and you will find that service there... the system is failing us, the system is really failing us.”

6.3.3 EMS management

Participants also commented on the effect that EMS management played in attracting, retaining and motivating them. Participants agreed that the role a manager plays in an organisation was critical to its image and sustainability. The lack of management skills was also detrimental to the organisation in meeting its goals. Participants also agreed that ALS practitioners do not need to be managed. They felt that these cohorts of practitioners were mature and intrinsically driven to function without supervision. The role that managers play in the retention of ALS practitioners was discussed extensively at all focus groups. Managers were seen as being incompetent in performing their duties due to their lack of specific management grooming. Practitioners commented that the lack of proper guidance by managers was a major contributing factor to poor retention.

“...we have EMS managers who are not equipped to understand emotional intelligence, looking after people; they are not equipped for that. And that is probably the biggest thing we need to do. We have a group of middle managers and middle senior managers that honestly don't see this as a problem, they recognise it as a norm, and until we change the paradigm of the senior manager, middle manager and base manager, to say this person is an important person and an asset that I want to look after.”

“...management style; autocratic, they don't care about your personal circumstances at all. I have actually found myself in circumstances now that is very precarious and they do not care about that at all, they're just trying to enforce what they say, and what they say is always right.”

“...a manager that is disrespectful, that treats you like absolute dirt, therefore you get that high absenteeism, you don't care about the equipment, you don't care about the vehicles, you don't care about the patients, it just becomes a job at the end of the day for a salary”.

6.3.4 Resources

Functional and recent medical equipment, surgical sundries and a serviceable response vehicle formed the basis for discussion in this category. The participants recognized these requirements as being vital to them performing their duties as ALS practitioners. They highlighted that such requirements would attract, retain and motivate them. Based on the discussions, resources were identified as a key category. Participants commented on the importance of the employer providing them with the right functional equipment, surgical sundries and response vehicles. A lack of or defective items resulted in ALS practitioners being frustrated with the ailing systems negating retention and motivation. The practitioners were fearful that practicing without the correct equipment would jeopardize the patient and result in mitigations.

“...smaller companies have kind of an image of fly by night, they cut corners, they are just trying to make as much money as possible without following the right procedures or using the right equipment, so definitely I don't think I would want to work for a small company”

“...you are given a vehicle that is a junk, a complete junk, you are risking your life, not just in the traffic that you are driving in, in responding, but with the kind of vehicle that you're using; it's not serviced properly, it's a hazard. The vehicle that you're driving in is a hazard, yet you are going to save somebody else, which was the subject of some other hazard, it doesn't make any sense.”

“I was also demotivated...sometimes we go without a cervical collar. ”How would you

treat your patients.", whatever you would do, and then we were told if you were given an empty ambulance and asked to go to point A and pick someone up and bring them to the hospital alone, you will go with that empty ambulance, put him on the back of the floor and take him to hospital...we were fighting; why isn't there drips, why isn't there proper collars here, why isn't this, you know, we were fighting the system, because we were plugging holes all the time..."

6.3.5 Teamwork

Participants also brought up the issue of teamwork in the EMS sector. They emphasized that teamwork and collegiality was an essential component in this labour intensive profession and that teamwork contributed to a harmonious working environment despite the poor salaries. Comments also revolved around the fact that teamwork among all role players in the emergency environment was far superior in SA as compared to other countries. The ALS practitioners commented on their qualification being seen as a treat by lower qualified practitioners. A lack of teamwork contributed to poor retention of ALS practitioners. Knowledge of the profession was not being effectively transmitted to new recruits resulting in poor teamwork. These practitioners were not exhibiting the exuberance for the profession resulting in demotivation.

"...a simple factor like staff attitude, along with equipment and all of that, but staff attitude, junior staff attitude; no paramedic wants to be employed when they are not going to have supportive staff driving ambulances and assisting them, because we can't do anything by ourselves."

"...it makes a big factor to actually bring unity to the team that is working, be it shift or be it company, whatever the case may be, with a base or what not. So, building in a good work environment will obviously make you want to stay there, so maybe the salary is not up to par, but it's such a grand place and I love the people..."

"...If one is working in a nice environment, enjoying the people that they are working with, that motivates them to stay. And if one always has quarrels with this one, quarrels with the other one, that also pushes people away, so you find people would rather settle for a lower salary than to work with people that are always giving them hassles and problems all the time...If you are in an environment, whether you like it or don't like it, as

long as you are happy that the people that you are working with make you happy. You can be earning a high amount of money or a less amount of money, but if you are happy you will stay in that environment.”

6.3.6 Workplace communication

Effective organisational communication was identified as a critical draw factor for ALS practitioners. A lack of clear organisational communication policies and procedures creates uncertainty amongst ALS practitioners and impacts negatively on retention. Inadequate two-way communication in EMS creates uncertainty amongst practitioners and leads to demotivation. Some participants commented as follows;

“... a clear communications policy is very important, with such things as responding to an enquiry or a request within a certain period of time, having some sort of a structure, where you can appeal a decision that is made; participative management structures, where you feel you have a say in what's going on in the organisation...If you feel a part of what's happening, then obviously you want to do better...”

“...there is a lack of understanding and there is no information sharing. If you at an operation level understand certain policies and things that are in place, you will do them with ease. But if you are told and it is dictated to you that you have to do it, and you don't understand why, then you are going to resist.”

“...I think the biggest issue our organisation has is bad communication at the moment. We don't know, we don't see the big picture at an operational level, so we are kept in isolation; that breeds negativity...and if that was explained to you, pre the fact, pre implementation, possibly would result in less negativity...Our company has a habit of doing things in secret and you get informed at the 13th hour this is happening, just deal with it...We would then be less negative and we would understand the bigger picture, and maybe have some input into it. Communication is a big thing.”

6.3.7 Hours of work

Participants did not favour their work hours as it often conflicted with their family and social life. Practitioners commented on the fears of working long hours and causing

medical negligence resulting in poor retention. They supported the need for working flexible hours saying this was more conducive to family life.

“...The shift system, I would say does need to still be looked at a little bit...Night shifts, it's not conducive to family living...I find myself working in a shift structure, where it is a long week, a short week, and some of the shifts lead onto 24 hours, 48 hours, 72 hours over the weekend, and you work a day shift, 07h00 to 19h00, you are then on standby from 19h00 to 07h00; that's the night shift...”

“...I think the major attraction for me currently is working hours...to have a family life, because we always treat and look after everyone else, but our family is the most neglected one of all...”

“...in terms of the organisation, there is no regard for your personal consequences, your personal safety, sometimes you will only get 3 hours of sleep in a 48 hours period, maybe eat only once or twice, so medico legally you are at an increased risk of making a mistake or driving into a tree or who knows what, the company doesn't care, they just cover their part, but it's very demotivating”.

6.3.8 Equal employment opportunities

Practitioners also reported on the need for the practice of equality in the workplace. They felt discriminated upon based on the colour of their skin and were not attracted to EMS organisations which practiced these ideologies. The implementation of the affirmative action policy has obstructed the career path of ALS practitioners. Practitioners also commented on the lack of future prospects for their children in SA.

“In South Africa today... and I think the South African context has to be taken into account, because especially as ALS you're sort of senior, you would have been around for a longer period of time than someone who has started off as new. There is very little room for advancement for certain race groups, and I think that is important, because a lot of appointments now are political rather than based on merit, and I think a lot of people are leaving because they don't see advancement – they don't see themselves advancing because from the outset they feel that basically their days are numbered as far as improving themselves and advancing up the ladder because of all the problems in organisations”.

“I know of many colleagues and friends who have left the country...those who choose to immigrate, the vast majority are white South African, and I think those things are causing immigration of South Africans, but most importantly white South Africans, is also a frustration and a lack of faith in government and the country, and feeling as if they don't have a place here anymore, and leaving for the sake of their kids...people don't feel as if they have a career path in the organisation by virtue of the colour of their skin, they won't be promoted, no matter how hard they work. That's one of the reasons why people leave.”

6.3.9 Participative decision making

Participants reported that being part of the decision making processes of the organisation made them feel welcome and such practices would attract, retain and motivate them to SA EMS organisations.

“... in terms of decision making and being part of the decision making process, that is very important, because you would not just be dictated to, you would be able to be part of the system and change the system, and bring your experiences, and at the same time and learn from other people.”

“...participative management structures, where you feel you have a say in what's going on in the organisation. I think all of those things are actually quite important for retention as well. If you feel a part of what's happening, then obviously you want to do better at what you are doing and you want to stay.”

“...decisions that has to be made without lower level involvement...particularly kitting the base or revamping a base and things like that directly impacts the person. I think being cut out of those decisions are highly demotivating...”

6.3.10 Workload distribution

Participants commented on the high workloads and the lack of having regulated breaks thereof. This impacted negatively on ALS practitioner retention.

“...the other thing that would retain me is workload – reducing high workloads are important when you want to retain staff.”

“The workload just increases...there is no time to breathe, no time to eat, and the chances of you hurting your back, becoming sick, then just puts more strain, and then you book off...”

6.3.11 Emergency medical dispatch

ALS practitioners commented on the inappropriate emergency calls which they are dispatched to. They felt that the emergency medical dispatchers (EMD) were not appropriately skilled. The emergency calls were not prioritized in the communication centre prior to dispatching the ALS practitioner resulting in the inappropriate use of their skills. These factors are contributing negatively to their retention and motivation.

“...dispatchers are very unconscious when they send a vehicle, they just look for a free vehicle and send it. If there is a paramedic on that vehicle, they tend not to reserve them for critical calls...”

“...Dispatch definitely needs to be better trained or better educated, not sending two vehicles to the same call, or one from east to west, across borders when you don't need to”.

“...But how long can you remain professional when you are immersed continuously in an unprofessional resource stretched horrible environment. If you put the most professional dynamic youngster who is ALS qualified, and put him on a vehicle that gets sent to rubbish calls that doesn't even need an ambulance...”

6.3.12 Clinical governance

Practitioners commented on the lack of proper clinical governance policies and procedures within their EMS organisations. Participants also commented on the improper implementation of clinical governance practices where the case reports of BTEMCC practitioners were being scrutinized by lower qualified CCA and NDEMC practitioners.

“...there are very weak clinical governance processes, there is not that effective support in providing good clinical guidelines, frequent feedback; guys don't know, "How well am I

doing at my job? The job that I am actually doing, I don't know how well I'm doing it, in terms of patient care. How well are my patients doing? How well is our system treating patients? How have we done to improve people surviving and walking out of hospital alive?"

"...the CCA/NDEMC quality assuring the BTEM and RSI...where they firstly either hadn't been trained in it ...because they weren't qualified to do so. So that was a big problem..."

6.3.13 Allied healthcare workers

Practitioners commented on the negative treatment they receive from the allied HCWs whom they come into contact with regularly. This reduces retention.

"...the job as well is quite stressful... you go to every other hospital and get treated like shit by every other nurse or doctor...that is enough to make you disgruntled and drive you into leaving, because then you would want to go off to better..."

6.3.14 Job description

Practitioners commented on their elaborate job description. They thought that all the other functions of personnel management, fleet management, quality assurance, etc. prevented them from performing their primary role and this contributed negatively to retention.

"...a fleet department should be sorting out vehicle problems or issues. I now have to deal with vehicle problems over and above human resource problems, over and above teaching problems. And it is something that I as an ALS, I should not be actually focusing on."

"...Stop trying to make them do ten other jobs at the same time. You are employed to treat patients primarily, well then treat patients; here's your equipment, here's your resources, go treat your patient..."

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6.3.15 Remuneration

Remuneration was a vital part to the employment package and sparked strong discussions amongst the samples. Participants argued for a market related salary for the prospective ALS practitioner saying it was a huge contributory factor to recruitment, retention and motivation. A liveable salary was discussed and participants felt that the cost of living was high and that they needed a market related salary to meet their living needs. Participants noted that it was the younger practitioners who had fewer commitments and therefore were pleased with a sub-par salary. However the older practitioners indicated that they had greater commitments and therefore would not settle for lower salaries. Participants suggested that salaries be based on the ALS practitioner's qualification/s and their years of experience. The occupation specific dispensation (OSD) was also discussed and its negative impact on recruitment, retention and motivation of ALS practitioners was highlighted.

"...talking about salary, because obviously we can't all live off passion alone...it has to be a liveable wage, and once you start thing like school and kids and things like that, and looking at having your own home, that money doesn't last very long. So, I don't think people are looking for you want to have an extravagant lifestyle, but just being able to cope. This is for the dogs, I can't do this anymore."

"...My personal reason for leaving my position in South Africa was finances firstly. I was not able to buy a house, I could barely make ends meet, I could barely pay for things. I have got a child as well, so I have got to take care of his needs. And long term as well, where would I get in ten years, for the salary that I was earning here; maybe paying off my debt and then saving nothing..."

"...the discrepancies between people who are in the same level of ALS, one is earning higher than the other, but we are expected to function at the very same level, so it also poses problems for others, especially when OSD was implemented. It created a huge outcry...salary is not a motivating factor, but a lack of a salary contributes to demotivation".

6.3.16 Additional benefits package

Practitioners commented on the need for an additional benefits package as recruitment, retention and motivation strategies. They argued that these allowances enhanced their basic salary.

"...Different allowances are important as it adds to our salaries but also recognises what we do. Danger allowance, uniform allowance and yes meal allowances. I think we deserve them and it will attract me".

"...We don't even get allowances. No danger allowances or anything. This bad because our salary is low and maybe the allowances will help us. How can we continue to work like this?"

6.3.17 Paid time off

Participants also remarked on their challenges experienced with leave applications. The shortage of ALS practitioners within their organisation was an obstacle to them being granted vocational leave. Paid time off was an effective attraction, retention and motivation strategy.

"...But in my organisation leave always seems to be a problem. Yes we have the different leave packages like sick leave and vocational leave and family responsibility leave. We even have study leave, but nobody explains to us how this works. We have accumulated leave which the manager does not approve because there is no one else to take your shift. So if I was looking for a job, then there must be clear leave plans...I think the major attraction for me currently is...leave...I want to go on holiday with my family but I could not because taking leave was a challenge. I want to be attracted to EMS that acknowledges your leave and your family time".

"...90 percent of the staff are absolutely burnt out. I think the annual leave package works out at 17 hours per month. But even then, when you request leave it is denied..."Look, we've got an attractive leave package..." it would definitely be a retention factor, that is the company looking after you, so if we care about your wellbeing, you are an asset to us, it's mutually beneficial...obviously all the structures need to be in place, like policies – you need to know that there are policies to support things like study leave and

vocational leave and maternity leave and all of the other aspects that should be with every organisation, that will support the holistic approach to the graduates or the employee”.

6.3.18 Promotion opportunities

Participants commented on their need to be promoted within the EMS organisation. Participants felt that opportunities for promotion were very sparse and career advancement was not an option in their organisation.

“...felt like I was stagnating where I was...I thoroughly enjoyed my job, I really did, but I was just not going anywhere...”

“... It becomes about retention, but if I know that there is a good progression pathway and there are opportunities within an organisation, then I would be more inclined to go that route and say there is opportunity for me.”

6.3.19 Job stability

Certain participants commented on job stability as a contributory factor to employee recruitment, retention and motivation. The discussions primarily revolved around bigger companies in the EMS industry being more stable as compared to smaller companies.

“...job stability and the benefits that also comes with the salary. I mean, obviously a salary must be able to support your everyday needs and your aspirations, whether you want to study further or build a home or have more children, but the actual benefits and the job stability actually factor a lot as well.”

“...the big factor that plays a role in the decision to be employed is job stability, so based on the size of the organisation, based on the number of years that the organisation has been operational for and their track record...”

6.3.20 Career development

ALS practitioners also discussed career development pathways as a recruitment, retention and motivation strategy. The participants felt that developing a career path was

essential to empowering the ALS practitioner. It stimulates the ALS practitioner to grow and prevents monotony in the workplace. Opportunities for career development were minimal in the SA EMS industry and thus slowed the practitioner's growth. It was reported that certain organisations undertake career development measures to motivate the ALS practitioners. However no formal career development programme exists and the lack of such a programme in other EMS organisations is demotivating practitioners.

"I think they have got to see the position as something in which they can advance, then they come in at a lower level. There should be some sort of a well-structured advancement programme in place. If you look at some of the overseas services; Australia, the UK, Canada, they bring people in and they have a structured system of training, in which the individual will get to a certain level within 3 or 4 years. This doesn't seem to exist in South Africa. You come into the service as a BAA; 15 years later you could still be sitting at that same level..."

"... If you want to study further it is kind of your own thing, you must sort that out yourself, there is not support behind you, or there is no assistance in any way at all...I want to go to a company that recognises training as a key factor in improving service delivery. In the government area this is lacking. All ambulances must have ALS and there must be a plan to train everyone".

6.3.21 Employee recognition

Employee recognition was considered a major category as the topic raised much discussion. Participants commented on the lack of recognition of ALS practitioners by management and other personnel. Practitioners were inclined to leave the organisation due to a lack of recognition. Employee recognition is an important strategy to attract, retain and motivate ALS practitioners.

"...staff are made to feel like they are worthless, treated like dirt, that you are easily replaceable, if you don't like it, then go get employment elsewhere".

"...more acknowledgment of what you are capable of, acknowledgement of what you've done and what you're capable of, and not trying to keep you stagnant or trying to suppress your ideas..."What do you really know, you're just a paramedic".

6.3.22 Coaching and mentorship

Participants were in favour of coaching and mentorship programmes for newly recruited ALS practitioners. The lack thereof makes the new recruit uncomfortable and less productive.

“...even on your first day you don't even know the area that you are working in, so that is becoming your first problem, because you don't know where you are going to be dispatched. How you are going to get there, so those little things, I believe that they can make a huge difference, in terms of assisting and making the new recruit comfortable on the job. And in terms of guidance in patient care, especially in critical patients, I think to have somebody for the first few – I can say six months, it will be very beneficial to the new person who is starting, as much as they are having a theoretical background, practically it is not as easy as it should be.”

“...you have to find your own feet, and it's very difficult...coaching and mentorship programs also would be great for graduates just qualified...lack of mentorship. A newly qualified paramedic, they are being thrown into the deep end, and they are expected to function as a seasoned paramedic, and that leads to demotivation...”

6.3.23 Health and wellness

Practitioners commented on the lack of support services to assist them with sensitive psycho-social situations. They were exposed to insensitive managers who stigmatised their request for help. This situation caused many practitioners to leave the organisation as no measures were in place to assist them with preventing burnout.

“...your psychiatric side for your stress levels. I don't think any service has that actually in place, because it is a stress driven...I think burnout is one of the major issues...90 percent of the staff are absolutely burnt out...”

“...I think what is lacking in our service is counselling. A lot of people have psychological problems, some because of what they see every day, and some because of the problems at home...nobody wants to listen...”

6.3.24 Diversified work environment

Practitioners commented on the need for a diversified work environment which will stimulate and retain employees. Given the challenges ALS practitioners face on a daily basis, as highlighted above, practitioners preferred a diversified work environment with rotation at different work stations. Options included management, education, short term contracts, communication centre, aeromedical, *etc.* to retain them.

“...ALS go to work the next time in a different setting, and after their so-called short contract...because we've broken that cycle as such. That is just one example of diversification...”

“...I was on the road for eight years and I was starting to get – like had paranoia sessions and I need to do something different now. And if I hadn't gone into the education side of things I was heading to Angola...”

“I needed some sort of change, I was becoming bored...I always needed the environmental change to keep me to stay in the work...with rotation, there needs to be some sort of skills plan in place...”

6.4 Conclusion

Chapter six presented the data gathered during the second phase of this research study. The demographical data of the participants in the focus groups and interviews were presented. Further, categories related to ALS practitioner recruitment, retention and motivation were highlighted. Chapter seven presents the discussion of the study findings.

Chapter 7: Discussion

7.1 Introduction

This study was conceptualised to identify factors that affect ALS practitioner recruitment, retention and motivation. Mixing of the quantitative and qualitative data of the study identified 19 ALS practitioner recruitment factors, 25 retention factors and 16 motivation factors. These factors were then categorised into the practitioners' work environment, employment package and professional development. Strong recruitment, retention and motivation factors identified include: remuneration, EMS management, organisation culture, resources, health and wellness, employee recognition, the work environment and safety and security.

The study found that 80.8% (n=1050) of the ALS population surveyed worked in SA with the remaining working outside the country. Also, fewer Black ALS practitioners work outside the country compared to any other race group. More males than females of this sample work outside the country. Almost 23% (22.6%, n=294) of the ALS practitioner population were between the ages of 40-50 years. Given the intensity of the work related to the profession, the ALS life expectancy was unknown. More ALS practitioners with tertiary qualifications and other additional qualifications chose to work outside SA. The provinces in the country with ALS training institutions employ the highest numbers of practitioners. The five provinces with no ALS training institutions experience significant ALS practitioner shortages. The public EMS sector is the largest employer of ALS practitioners in the country (50.2%, n=653). A further 42.0% (n=546) of the sample was employed by the private EMS sector. Maldistribution of ALS practitioners is a serious concern in the industry. Only 10.1% (n=131) of the sample worked in rural settings as compared to 71.2% (n=926) who worked in urban areas.

7.2 ALS practitioner recruitment, retention and motivation factors

The recruitment, retention and motivation factors are presented accordingly in three subsections *viz.* the work environment, the employment package and professional development. The reliability statistics for recruitment factors showed a high level of consistent scoring by the ALS practitioner (0.971) and EMS manager (0.973). This implies that all participants were in agreement with the factors which influenced ALS practitioner recruitment. Furthermore, the strength of the relationships between all recruitment variables tested was strong with a Kaiser-Meyer-Olkin measure of sample

adequacy of 0.965 and a Bartlett's Test of sphericity of 0.000 for sample 1. The average score for the level of agreement amongst EMS managers for recruitment factors was 95.7% (n=57). This highlights that the factors listed were important to recruiting ALS practitioners to the SA EMS industry.

Similar factors which were identified to recruit ALS practitioners to the SA EMS industry also influenced the practitioner's retention. The reliability statistics showed a high level of consistent scoring by the ALS practitioner (0.961) and EMS manager (0.973) respondents for ALS practitioner retention factors. This further implies that all participants were in agreement with regards to the factors which influenced ALS practitioner retention. The strength of the relationships between all retention variables tested were strong with a Kaiser-Meyer-Olkin measure of sample adequacy of 0.962 and a Bartlett's Test of sphericity of 0.000 amongst the ALS practitioners. The average score for the level of agreement by EMS managers for retention factors was 95.9% (n=57). This highlights that the listed factors were important to retaining ALS practitioners in SA EMS organisations.

Further, the reliability statistics showed a high level of consistent scoring by the ALS practitioner (0.977) and EMS manager (0.976) respondents for ALS practitioner motivation factors. This implies that all participants were in agreement with regard to the factors which influenced ALS practitioner motivation. Furthermore, the strength of the relationships between all motivation variables tested was strong with a Kaiser-Meyer-Olkin measure of sample adequacy of 0.968 and a Bartlett's Test of sphericity of 0.000 amongst the ALS practitioners. The average score for the level of agreement by EMS managers for motivation factors was 94.8% (n=56). This infers that the listed factors were important to motivating ALS practitioners in SA EMS organisations.

Factors related to the ALS practitioner's work environment are presented initially followed by their employment package and professional development.

7.2.1 The ALS practitioner's work environment

The work environment relates to the place where practitioners perform their duties. The factors identified which relates to ALS practitioner recruitment, retention and motivation include the organisational culture, the working environment, EMS management, resources, teamwork, workplace communication, hours of work, equal employment opportunities, participative decision making, workload distribution, emergency medical

dispatch, clinical governance, allied HCWs, job description, safety and security and recreational facilities. Each category is discussed below.

7.2.1.1 Organisational culture

Organisational culture was identified as a significant factor which contributed to ALS practitioner recruitment, retention and motivation. Participants in the study expressed their concerns regarding the organisations' mission, vision, unethical business practices and lack of employee-centredness.(289) Proper policies and procedures to guide and govern the organisation and help it achieve its goals were lacking. Practitioners resigned from organisations due to poor business practices and a lack of ethics. The business model of the private sector EMS and the *laissez-faire* approach by the public sector EMS was not conducive to the retention of ALS practitioners. Some of these comments are reflected below.

"...I want to work for an organisation that has got good quality, in terms of how things work ...from the admin processes, to the clinical governance structures, to the quality assurance...I think the biggest problem that we have is that there isn't any quality indicators for anything that we do. If there is anything that should be done to improve recruitment, I would think that all agencies or all services should start there, in terms of deciding if we're going to have quality, what is quality, what is it that we want to measure to determine whether we have quality. So, if I wanted to work for a government sector organisation, for example, I want to know that if I am working there, good measures in place to determine whether I am doing my job properly; and two, that there is measure in place to improve the standard of practice."

Presently, there is no unified regulatory framework to govern the public or private EMS sectors in SA. Each organisation designs and conforms to their own set of guidelines, if any exist. However, these guidelines may differ between EMS organisations and provinces. For example, the South African Private Ambulance and Emergency Services Association (SAPAESA) has prescribed guidelines for members only. Membership with SAPAESA is not compulsory. The lack of a collective regulatory framework for EMS in the country means that ALS practitioners are exposed to varying degrees of business practices. These may include unethical practices.

The image an organisation portrays is important to attracting the right ALS practitioner.(290) The tenets of employer branding are contained in Maslow's theory. By

creating an environment that is employee-centred, organisations enhance their attractiveness in the competitive global market.(291) Employees in such organisations are able to grow and achieve self-actualisation needs sooner.(105)

As much as the ALS practitioners are evaluating EMS organisations for prospective employment, management within these organisations are seeking candidates that best suit their organisation's culture. Management must ensure that there is an appropriate fit between the ALS practitioner and the organisation during the recruitment process.

"...I look at character and personality of the prospective ALS practitioner. Obviously, for me, culture is more important: are you willing to work within the dynamic culture? Do you have the personality and the character to suit this type of culture that we breed within the organisation? At the end of the day, I believe that if you suit that culture then you'd be happier within your work environment and you'd be less tempted to leave..."

EMS organisations, the world over, are very standard operating procedures (SOPs) driven. These SOPs are broad and contain a vast array of sections which are designed specifically for certain operations. Sections may include the practitioner's personal appearance and attire when on duty, their conduct, response driving, communication, infection control, clinical governance, patient management, etc. These SOPs coupled with other organisational policies, guide the practitioner in the performance of their duties. However, a lack of or poor governance of SOPs creates an unpleasant working environment. All staff members will be acting on their own intuitions resulting in organisational chaos and high attrition of practitioners. Vogt *et al.* highlight the lack of proper organisational policies is restrictive and deters employee retention.(114) The lack of a regulatory framework for EMS in SA is further contributing to ALS practitioner loss.

"I have been in EMS for most of my adult life and I have seen this industry take a nose in the recent past. Clearly, we don't have a unified or common framework which governs and regulates EMS in this country. Each EMS organisation unto themselves. Everybody does what they please to and how they want to. No regulatory body informs their practice and I think that ALS practitioners are getting tired of this rat race. They eventually up and leave. We need to get our act together. I think this is a serious problem."

"...the biggest problems in the organisations that we work for is that, there isn't proper policies and procedures in place...no accountability...An organisation should have multiple SOPs in place to make sure that things run smoothly..."

Practitioners are motivated when their goals are aligned to the EMS organisation's goals. However, EMS organisations that lack proper systems, policies and procedures reduce the practitioner's willingness to function optimally. According to Herzberg's theory, organisational culture is a hygiene factor and its absence determines the practitioner's level of dissatisfaction with the organisation.(84) These external business practices however, influence the practitioner's motivating factors.(173) The lack of suitable EMS organisational systems impacts negatively on the practitioner's higher order needs viz. growth, advancement and achievements.(84)

The EMS organisation's culture has a direct impact on its probability to attract ALS practitioners. Furthermore, ALS practitioners have suggested that they want to work for EMS organisations that portray an exemplary culture. EMS organisations in SA must improve their business practices through the effective development and implementation of policies and procedures in order to recruit, retain and motivate ALS practitioners.

7.2.1.2 Work environment

Most ALS practitioners agreed that their work environment was a critical factor in recruiting (92.0%, n=1196), retaining (92.3%, n=1200) and motivating (88.5%, n=1151) them to EMS organisations in SA. A significant relationship between the work environment and ALS practitioner recruitment ($p=0.000$), retention ($p=0.000$) and motivation ($p=0.000$) was found. Most EMS managers also agreed that the work environment was important to recruiting (93.3%, n=56), retaining (91.6%, n=55) and motivation (91.7%, n=55) ALS practitioners. The chi square test showed a significant relationship between the work environment and the EMS manager's race ($p=0.045$) and their highest EMC qualifications ($p=0.009$). This signifies that EMS managers from different racial backgrounds have differing perceptions of a hygienic workplace and its role in attracting ALS practitioners. These findings were also found with the EMS manager's highest EMC qualifications.

The working conditions within various EMS organisations and how this affects ALS practitioner attraction, retention and motivation was also discussed in the focus groups. Unhygienic and unsafe work conditions drew ALS practitioners away from these environments. Participants commented as follows,

"...the health factor, because I worked in a base where it was flea infested...and also the whole base was not conducive to any kind of social or teaching or any kind of environment...there was like one couch and a two-metre space where you could move.

Not all the crews could sit in there. There was a cable spaghetti in the middle and they hit a light quite regularly, because the charging things didn't work...we got really frustrated, because we thought that we were in a system we have to look after health and safety and there was really nothing to look after our wellbeing."

"Unfortunately, the working conditions were not appropriate for a Department of Health. It will certainly not attract any new ALS. The base that I worked at was infested with cockroaches, rats and bird droppings...We often got sick and were off work. We may have taken those bugs home to our family. We had no proper method or guidance to clean the vehicles. People did what they thought was correct. Nobody provided us with the necessary disinfectants. I am glad I left and will not encourage anyone to work there".

Participants described their work conditions in certain SA EMS organisations as "dangerous". The unhygienic work stations and vehicles predispose them to infections. The practitioners feared exposing their family members to these infections. Conversations revolved around how dissociated management was with the poor work conditions at an operational level.

A reflection on Maslow through his Hierarchy of Needs Theory inducts the importance of a safe and healthy environment for practitioners.(104) Failure to provide a healthy work environment would impact negatively on ALS practitioner attraction to EMS organisations. The absence of a regulatory framework for the SA EMS industry enables poor working conditions to progressively worsen. Practitioners in various parts of the country are forced to work out of their response vehicles, without proper ambulance bases. However, in certain organisations where ambulance bases are available, the conditions are suboptimal. Practitioners have no access to a hygienic environment where they can eat their meals or rest. Given the high pressured nature of work, the ability for short periods of rest are critical. The lack of suitable facilities is unattractive to practitioners who may then seek employment under more favourable settings.

Empirical evidence highlights that practitioners are dependent on an improved working environment in order to advance service delivery.(150) Thus, an unhealthy work environment (e.g., unkempt ambulance bases, pest infested bases and response vehicles and poor or no infectious disease protocols) is not conducive to attracting the best practitioners for the job.(292) These conditions negate the Basic Conditions of

Employment Act 75 of 1997. Furthermore, an unpleasant work environment is associated with a decaying system and is unattractive to prospective employees. Such environments predispose existing practitioners to injury and disease and may render them unwell in a challenged clinical setting.

“...The environment that you work in, when you return to your base station after a call, it is a mess. The health and safety standards are way below par, you can't use the toilet because they are all broken, the fences are all broken, there is no safety, you can come back to your personal vehicle being broken into and there is not enough lighting...If you are looking at that base you will just go and look for the most filthiest most underdog place that you can, and you will find that service there... the system is failing us, the system is really failing us.”

The lack of a regulatory framework for EMS in the country has contributed to the appalling conditions at certain organisations. In order to become an accredited service provider with the BHF, EMS organisations undergo an initial inspection. Follow-up annual inspections of the ambulance bases, response vehicles and EMC practitioners are not conducted extensively. This then allows the work conditions at certain organisations to become “the filthiest”, as described by a focus group participant. It is envisaged that the recently approved EMS regulations governing their accreditation will help improve these conditions.(293)

Further, Lewin's Force-Field Analysis Theory identifies unsafe and unhygienic work conditions as restraining forces which negate retention.(86, 116) Unhygienic working conditions are also identified as a push factor driving employees away from organisations.(39, 120, 192) However, a hygienic workplace acts as a non-financial incentive to practitioner retention.(161, 163)

Additionally, work conditions, according to Herzberg's theory, are an extrinsic (hygiene) factor and cause dissatisfaction.(84) Although work conditions may not impact directly on employee motivation, these dissatisfaction factors must be addressed by EMS organisations to encourage ALS practitioner motivation.(110) Work conditions within an organisation are linked to the organisation's culture and act as non-financial incentives to improve practitioner motivation.(171) The lack of effective governing policies and procedures threatens work safety. The lack of a proper infection control policy within the EMS organisation translates to poor infection control practices and an increased risk of infection transmission among practitioners. Therefore, the lower order extrinsic factors

must be fixed in order for the practitioner to be motivated by the higher order satisfiers.

Clearly, a respectable work environment is essential to recruiting, retaining and motivating ALS practitioners. Both ALS practitioners and EMS managers concurred with regards to its importance. EMS organisations in SA must improve their work environments in order to improve their competitiveness in the global market. Poor work conditions create dissatisfaction amongst ALS practitioners and will eventually lead to poor motivational levels.(1) This will further decrease the practitioner's willingness to perform their tasks thereby compromising service delivery. EMS organisations must ensure that the Basic Conditions of Employment Act, Number 75 of 1997 are not contravened in any way.

7.2.1.3 EMS management

The majority of the participants agreed that the EMS manager was an important link to recruiting (84.5%, n=1099), retaining (92.2%, n=1199) and motivating (92.7%, n=1205) ALS practitioners to EMS organisations in SA. A significant relationship between the EMS manager and ALS practitioner recruitment ($p=0.000$), retention ($p=0.000$) and motivation ($p=0.000$) was found. Most EMS managers also agreed that they played a salient role in recruiting (96.7%, n=58) and motivating (93.3%, n=56) ALS practitioners. The p-value of 0.036 showed a significant relationship between EMS management and the different race groups of the EMS manager participants, implying that EMS managers from different racial backgrounds in SA have differing perceptions on EMS management and their role in attracting ALS practitioners to the organisation. Participants also commented on the effect that EMS management had on attracting them. Participants agreed that the role an EMS manager played in an organisation was critical to its image and sustainability. The lack of management skills was also detrimental to the organisation meeting its goals.

"...we have EMS managers who are not equipped to understand emotional intelligence, looking after people; they are not equipped for that. And that is probably the biggest thing we need to do. We have a group of middle managers and middle senior managers that honestly don't see this as a problem, they recognise it as a norm, and until we change the paradigm of the senior manager and the middle manager, base manager, to say this person is an important person and an asset that I want to look after."

empowered with a formal management qualification are better equipped to lead and manage organisations.(92, 187, 188) EMS managers in SA have been appointed predominantly into managerial posts by virtue of their EMC qualifications.(190) Of the sample of EMS managers who participated in phase one of this research study, just over half (52%) indicated being in possession of a general management qualification. This highlights that the remaining EMS organisations were being managed by EMS managers who lacked a management qualification.

Further, the manager is tasked with the responsibility of being the “face” of the EMS organisation as he/she is exposed to the practitioners regularly.(191) These managers, therefore have to possess the necessary knowledge and skills to be able to appropriately guide their team. Lewin’s Force-Field Analysis Theory postulates that ineffective and unqualified managers contribute to practitioner restraining forces attributing to poor retention.(116) The lack of appropriate management and supervision was considered a contributor to high employee turnover.(3, 120, 192) Poor employee supervision is a push factor. However, the skill of appropriate and effective supervision acts as a non-financial incentive.(39, 161, 163)

Participants seemed to agree that ALS practitioners do not need to be managed. They felt that these cohorts of practitioners were mature and intrinsically driven to function without supervision. EMS managers were seen as being incompetent in performing their duties due to their lack of specific management grooming. Practitioners commented that the lack of proper guidance from managers was a major contributing factor to high turnover.

“I think in the public sector, a major problem is we’ve got lower qualified people sitting in management, so when they are there we are a threat to them... Accountability...they’re already talking about going on contract, they’re talking that they’re fed up of management, they are tired of – so, they’re pushing the guys away.”

Practitioners are also managed by personnel from different fields, e.g., nursing. These managers are not familiar with EMS operations and systems. This further frustrates practitioners resulting in them leaving.

“...EMS is not managed in all areas by EMS managers, so when they go to the districts and they’re managed by people with no EMS knowledge... they report via a district health system, so they seem like the step- child and then they have nobody to speak to or to tell them what their problems are, so they just tend to leave...”

Punitive measures by EMS managers are considered the norm rather than skilfully analysing the problem and collectively deciding on a solution.

“...I don't think that managers are bad inherently, the issue is there is poor management training, so there are no opportunities for managers to become better managers...”

EMS management is interrelated to the organisational culture and the work environment. These managers can reinforce and shape the organisational culture and work environment to create an atmosphere that inspires ALS practitioners.(171) Managers must recognise the work that practitioners do, provide them with effective and constructive feedback, create an environment that is conducive to teamwork, encourage participative decision making and improve professional development opportunities. According to Herzberg's Two-Factor Theory, supervision is believed to be extrinsic in nature rather than a motivator.(110) However, the EMS manager is responsible for increasing the ALS practitioner's level of responsibility, improving their achievements and enhancing practitioner advancements, among others.(190) These satisfaction factors have been associated with long-term motivation.(109) Therefore, EMS managers must be skilful in performing their duties of leadership in order to augment ALS practitioner motivation and performance within the organisation.

In the continuum of management styles, from autocracy to *laissez-faire* managers, researchers in healthcare highlight that managers should possess qualities that enhance organisational performance. Consultative and democratic management styles have been shown to improve employee recruitment, retention and motivation.(294-296) EMS organisations must therefore upskill their managers in order to improve ALS practitioner recruitment, retention and motivation.

7.2.1.4 Resources

This section argues the important role that resources play in the recruitment, retention and motivation of ALS practitioners in SA. The majority of the participants agreed that providing the practitioner with essential resources to perform their function was imperative to recruiting (90.2%, n=1172) and retaining (92.2%, n=1198) them within the SA EMS industry. There was a significant relationship between providing ALS practitioners with the required resources and their recruitment ($p=0.000$), retention ($p=0.000$) and motivation ($p=0.000$). This relationship highlighted that ALS practitioners acknowledged that the availability of resources would recruit, retain and motivate ALS

practitioners.

Majority of the EMS managers also agreed that providing ALS practitioners with resources contributed to their recruitment (91.7%, n=55), retention (96.7%, n=58) and motivation (96.7%, n=58). Those managers with higher EMC qualifications were found to see resources as a critical factor in recruiting ($p=0.020$), retaining ($p=0.043$) and motivating ($p=0.043$) ALS practitioners. This implies that EMS managers with higher EMC qualifications differ in perception on the resources as a recruitment, retention and motivation factor for ALS practitioners.

The issue pertaining to equipment was also a significant category in the data and was discussed at length in all focus groups. Participants commented on the importance of the employer providing them with the right functional equipment, surgical sundries and response vehicles. A lack of or defective items resulted in ALS practitioners being frustrated with the ailing systems which negated retention and motivation. The practitioners were fearful that practising without the correct equipment would jeopardise the patient and increase their risk of malpractice.

“...equipment shortages never attracted me...The equipment they provide is not durable for EMS work and brakes all the time. Then it goes for repairs and this takes months. Sometimes, you don't see the equipment again and there is no replacement. You have to make a plan. These companies are not attractive...brings the element of fear; I am practising as an independent practitioner, and I am accountable not to my employer, but to HPCSA, and is my employer who put me in this situation going to be willing to back me up, to say we didn't have that equipment available to you, when you are sitting in front of that panel at HPCSA, trying to defend yourself?...”

Appropriate and technologically advanced equipment is imperative for ALS practitioners to perform specialised skills within their scopes of practice. Practitioners view state-of-the-art medical equipment as important to facilitating effective patient management and improving patient outcomes. Outdated and faulty equipment compromises patient care.(193) This adds to the stressors experienced by the ALS practitioner during the treatment of a critical patient. A poor support service system results in medical equipment being unserviceable for prolonged periods at a time. The lack of alternate equipment during this time also compromises service delivery. Practitioners are therefore not attracted to organisations with poorly prepared systems. EMS managers supported the fact that practitioners are incapable of performing ALS skills without the proper

equipment. The lack of appropriate equipment and presence of defective equipment implies restraint, according to Lewin's Force-Field Analysis Theory.(116) The restraining forces build negativism and enhances employee turnover. Inadequate, outdated and defective equipment contribute to push factors.(3, 39, 120)

"...There's nothing worse than working in an organisation if you're trained to do certain things and then you don't have the equipment to actually carry out those job functions...I will actually by default not be treating my patients properly, because there is no oxygen, so how I make half a cylinder last two years I don't know; there is no bandages, there's no monitors, there's no vehicles...So, that is a demotivator for me. I would not go back into that system, because ethically and morally I don't feel I would do justice for myself as an ALS, I don't think so. I would rather go and do another job..."

The lack of important surgical sundries viz. drips or medication, will further compromise patient care. Practitioners will not be able to treat the critical patient appropriately, which will increase morbidity and mortality rates. Inferior quality surgical sundries hinder effective patient care and borders on the violation of proper patient care.(195) They are therefore not attracted to organisations that lack the necessary sundries that promote high quality patient care. Furthermore, practitioners are not attracted to EMS organisations that lack proper response vehicles. Practitioners are dependent on response vehicles to access patients during emergencies. These vehicles must be appropriate, based on the terrain of operation and must also be roadworthy at all times.(297) Repairs and maintenance of these vehicles must therefore be conducted timeously.

Certain EMS managers identified that ALS practitioner salary in the public EMS sector was non-negotiable and based on OSD. They resolved to use other strategies to retain practitioners. State-of-the-art equipment was bought as a form of remediation for the salary disparities. However, practitioners were not given ownership of the equipment and it could only be utilised when working in the public EMS sector. This quick fix solution was not sustainable and ALS practitioner turnover persisted.

"...we can make your working conditions as bearable as possible, have all the medical resources that you need, because that is one of the second issues that guys rate, besides salaries was the fact that they would want specialised medical equipment..."

These EMS managers also alluded to the fact that a lack of medical equipment was a

deterrent to retaining ALS practitioners.

“...ALS equipment, we have a total of, total of two adult ventilators in the entire province in government, transport ventilators, and we have one neonatal ventilator functional. So we have ALS working out there with minimal equipment... last year was the first year that we had ALS drugs introduced.”

Providing the ALS practitioner with the appropriately functioning equipment, response vehicle and surgical sundries is an organisation's responsibility.(171) These practices are governed by organisational policies and procedures under the ambit of the organisational culture. The EMS manager reinforces these practices. However, in the absence of a skilled leader these responsibilities are neglected. Although equipment is a hygiene factor according to Herzberg's theory, it is however directly related to the practitioner's achievements.(110) The lack of these short-term factors will cause practitioner dissatisfaction. Ultimately, it will impact negatively on the practitioner's motivation levels. Some EMS managers acknowledge that providing practitioners with the appropriate medical equipment encourages job satisfaction.

“...the fact that we provide our staff members with all of the relevant tools, the latest technology to assist them in fulfilling their duties, also removes that feeling of helplessness...we don't have the right equipment, I can't operate at the right level. So we provide them with all of that infrastructure to ensure that they are operating as they were trained to operate, and I think those factors are sometimes overlooked and we don't realise not having the right equipment, the right vehicle, the right access to resources, what effect that has on the staff members. So intrinsically I think, based on those, there is generally a higher satisfaction level...”

The availability of resources was identified as a strong factor that significantly contributes to ALS practitioner recruitment, retention and motivation. EMS managers must ensure that they provide ALS practitioners with all provisions required to practice.

7.2.1.5 Teamwork

The majority of the participants agreed that teamwork within the EMS sector was crucial to recruiting (90.9%, n=1182) and motivating (92.3%, n=1200) ALS practitioners. A significant association between teamwork and ALS practitioner recruitment ($p=0.000$)

and motivation ($p=0.000$) was found. EMS managers also agreed that teamwork in EMS organisations was vital to recruiting (95.0%, $n=57$), retaining (95.0%, $n=57$) and motivating (95.0%, $n=57$) ALS practitioners. A significant association ($p=0.035$) between teamwork and the different racial backgrounds of the EMS managers was found. This signifies that the EMS managers from different racial groups who completed the questionnaire have differing perceptions of teamwork being an attractive factor for ALS practitioner recruitment. Moreover, teamwork also showed a significant association ($p=0.001$) with the highest EMC qualifications obtained by the EMS managers. This confirms that EMS managers with different EMC qualifications have differing perceptions on the role that teamwork plays on ALS practitioner recruitment.

Focus group participants also raised the issue of teamwork in the SA EMS sector. They emphasised that teamwork was an essential component in the EMS profession. Furthermore, they commented that teamwork contributed to a harmonious working environment despite the poor salaries. Teamwork is described as a dynamic process comprised of more than one practitioner with similar skills, having a shared understanding when clinically assessing, performing a differential diagnosis and treating a critical patient.(298) Coupled with team dynamics, collaboration and improved channels of communication, teamwork encourages improved patient care and outcomes.

“...a simple factor like staff attitude...junior staff attitude; no paramedic wants to be employed when they are not going to have supportive staff driving ambulances and assisting them, because we can't do anything by ourselves ...it makes a big factor to actually bring unity to the team that is working, be it shift or be it company...So, building in a good work environment will obviously make you want to work there, so maybe the salary is not up to par, but it's such a grand place and I love the people...”

A collegial work environment is central to attracting ALS practitioners to the SA EMS industry.(197) Treating a critical patient requires a team-based approach to minimise potential adverse outcomes.(199) The pillars of safety, efficiency and patient-centeredness are of paramount importance in the prehospital environment. A minuscule lapse in concentration of any of the team members could result in catastrophic consequences for the patient, medical personnel and all other persons on scene.

“...I had to stand three hours on scene waiting for an ambulance which was five km away...how many times I had to load patients with an extremely rapid heart rate in my car, to get them to hospital, because the ambulances just are not coming; not that they

are not available, they are available, they just don't want to come. And I think the teamwork aspect is of critical importance”

The shortage of ALS practitioners has resulted in a vicious cycle. When ALS practitioners leave the organisation, the vacated post remains unoccupied for an extended period of time due to the small pool of available ALS practitioners. EMS managers identified that they were both unable to attract ALS practitioners (85.0%, n=51) and were unable to retain practitioners (76.7%, n=46). According to the EMS managers, the lack of available ALS practitioners coupled with budgetary constraints worsened their plight. During this period, existing practitioners are expected to “take up the slack” with increased workloads. However, these practitioners then became prone to burnout which leads to an increase in absenteeism.(198) This only worsened the ALS shortage. The remaining ALS practitioners were then forced to seek employment at less stressful organisations, with some going abroad. The even distribution of workloads is essential to maintain a steady workforce of ALS practitioners.

Teamwork according to Vogt *et al.* contributes to an employee’s belongingness and love needs, resulting in their retention.(88) Furthermore, Lewin’s Force-Field Analysis Theory implies that teamwork as a driving force encourages employee retention while a lack thereof acts as a restraining force. The lack of teamwork amongst practitioners is also considered to be a push factor contributing to their migration.(299) Maslow’s Hierarchy of Needs Theory highlights the need for humans to coexist in teams.(106) However, interpersonal differences contribute negatively to a friendly work environment.

Furthermore, the operational aspects of teamwork are the responsibility of EMS managers who are guided by organisational policies. In the absence of such policies and the presence of ineffective EMS managers, practitioners become subjected to dysfunctional teams. EMS organisations must ensure that effective teamwork principles are practiced in the SA EMS industry in order to prevent ALS practitioner turnover.

7.2.1.6 Workplace communication

This section presents a discussion on effective communication in the workplace and its role in ALS practitioner recruitment, retention and motivation. Majority of the participants agreed that effective workplace communication was invaluable to recruiting (87.6%, n=1139) and motivating (93.6%, n=1217) ALS practitioners. A significant association between workplace communication and ALS practitioner recruitment ($p=0.000$) and

motivation ($p=0.000$) was found. Most EMS managers concurred that effective workplace communication was vital to recruiting (96.7%, $n=58$), retaining (95.0%, $n=57$) and motivating (93.4%, $n=56$) ALS practitioners. The p -value was less than 0.05 ($p=0.043$) for effective workplace communication and the ages of the EMS managers implying that the null hypothesis was rejected. There was a significant association between the age of the EMS managers and workplace communication. Furthermore, effective workplace communication also showed a significant relationship ($p=0.000$) with the EMS manager's highest EMC qualification. Some participants commented as follows,

"...there is a lack of understanding and there is no information sharing. If you at an operational level, understand certain policies and things that are in place, you will do them with ease. But if you are told and it is dictated to you that you have to do it, and you don't understand why, then you are going to resist."

Workplace communication within the EMS industry have not been effective over the years. Various EMS organisations function in isolation with very little interdisciplinary collaboration and bad communication practices have become the norm. The lack of benchmarking against international best communication practices has also allowed suboptimal organisational channels of communication to persist.(203) The disjointedness within the industry and communication channels has translated into ineffective transmission of information within the organisation.

Effective workplace communication in the organisation is the backbone of EMS systems. In the absence of a clear communications policy within the EMS organisation, miscommunication will prevail. Two-way communication externally and within the organisation encourages employee-employer interaction and engagement. These communication practices improve collaboration and employee-centeredness and enhances ALS practitioner recruitment.(300)

Effective communication must be established with ALS practitioners during the recruitment process. This prevents any ambiguity in the transmission of messages and clarifies the roles and responsibilities of the employer and the employee.

"...I think the biggest issues our organisation has is bad communication at the moment. We don't know, we don't see the big picture at an operational level, so we are kept in isolation. That breeds negativity...and if that was explained to you, pre the fact, pre implementation, possibly would result in less negativity...Our company has a habit of doing things in secret and you get informed at the 13th hour this is happening, just deal

with it...We would then be less negative and we would understand the bigger picture, and maybe have some input into it. Communication is a big thing.”

Workplace communication is a commodity that is valued by practitioners.(301) Effective communication policies guide the dissemination of an organisation’s information. These practices will direct the spread of the correct information as desired by the practitioners. The lack of proper communication within the organisation leads to poor practitioner satisfaction and retention.(301) Poor communication in the workplace pushed practitioners away from organisations in Kenya.(170) The SA EMS industry has experienced a similar effect.(3)

ALS practitioners consider themselves to be an integral part of an EMS organisation. Practitioners therefore feel that they should contribute meaningfully to these organisations. However, due to an ineffectively skilled EMS manager or the absence of adequate organisational communication policies, practitioners are omitted from organisational communication, either wilfully or not. The lack of top-down communication in EMS creates uncertainty amongst practitioners and leads to demotivation.

“Frustration, certain things were decided and done that were just clearly not good ideas from the ground point of view. It was never sort of accepted in that sense; it was just forced to continue. And I think a lot of people got demotivated...”

Effective organisational communication is linked to organisational culture and the skilled manager. It is through valued communication that managers are able to inspire loyalty among practitioners.(1) Communication of the organisation’s vision, mission and goals by the manager stimulates the practitioners to improve their willingness to achieve service delivery. Herzberg views organisational communication as hygiene factors which if absent will result in practitioner dissatisfaction.(110) However, communication is directly linked to intrinsic factors of achievement, recognition and levels of responsibility. Therefore the lack of effective organisational communication will foster poor practitioner motivation.

Workplace communication has been identified as a factor that will enhance ALS practitioner recruitment, retention and motivation. The lack of effective communication in the workplace has been identified as a factor which enhances ALS practitioner turnover. EMS managers must ensure that they involve all employees in workplace communication in order to encourage their retention.

7.2.1.7 Safety and security

Participants agreed that safety and security was necessary to being recruited (89.9%, n=1168), retained (89.6%, n=1164) and motivated (91.4%, n=1188) in SA EMS organisations. There was a significant association between safety and security and ALS practitioner recruitment ($p=0.000$), retention ($p=0.000$) and motivation ($p=0.000$). Most EMS managers also agreed that safety and security was essential to ALS practitioner recruitment (98.3%, n=59), retention (98.4%, n=59) and motivation (96.7%, n=58). Concerns about personal safety at work and the safety of their family members at home were raised as follows,

“Crime is one huge factor. I think the crime at the moment is just not conducive to especially family living and so on...”

By virtue of the environment in which the ALS practitioner functions, he/she is prone to violence from the public, patient, colleagues and managers.(302) These forms of violence include harassment, bullying, assault, intimidation and aggression.(303) Practitioners are attracted to organisations that have clear policies to identify vulnerable situations and procedures to follow in such situations. These policies must also guide other hazardous practices viz. response driving, infectious disease and crowd control.

Practitioners also perform invasive lifesaving skills in unstable environments with poor lighting, adverse weather conditions, confined spaces and in hostile environments.(304) This heightens the risk of accidents and exposure to blood borne diseases which include: HIV/AIDS, and hepatitis B and C viruses. The practitioner has to therefore be equipped with the appropriate personal protective gear when treating patients.(305) In certain instances, practitioners are not provided protective gear, e.g., disposable gloves.

Practitioners are also at risk when responding with ground and HEMS response teams. These practitioners are challenged with high stress levels and a heightened risk of accidents.(306) The HEMS is further challenged as they respond to emergencies and land in areas with no designated helipads.(307) In the absence of an emergency response policy and the management thereof for ground and HEMS teams, practitioner safety concerns challenge their retention.

The high prevalence of crime in SA has negatively impacted all sectors of employment in the country.(79) Skilled persons have therefore sought employment in other countries with lower perceived crime rates.(3, 39, 120) Practitioners are not attracted to the EMS industry in SA due to high crime rates and fear for the safety of their family.(3)

Further comments related to practitioners entering volatile, gang-riddled environments with minimal protection forced them to leave the profession and country for safer environments. They felt that their safety in the workplace and home environments were threatened. Comments of the increased crime rates in SA were also raised. They were concerned for the safety of their family members and this forced them to move to safer living and working locations.

"...The crime; people are tired of having – not only do we go to crime, but we see it every day, we see these people coming into houses, raping, murdering, killing and now we start reflecting back home, "Am I being selfish staying in a country? Don't I need to go and take my kids and my wife where they'll be safe?"

The majority (93.0%, n=1209) of ALS practitioners agreed that they will remain in SA or return to work in the SA EMS industry if the country's crime rate dropped. Threats from perpetrated criminal activity or any other means is a huge contributor to employee turnover.(40) This is seen as a push factor and negates practitioner retention.(3, 39, 120)

Personal safety, according to Maslow's Hierarchy of Needs Theory, improves one's quality of life.(94) Vogt *et al.* also recognise safety needs as an essential retention strategy.(85) An unsafe environment is considered a restraining force according to Lewin's Force-Field Analysis Theory.(116) Workplace violence towards practitioners was previously considered to be part of the job.(308) However, as it is widely reported, practitioners are seeing that this is no longer an accepted norm but a harmful act. These acts of verbal abuse, intimidation, physical bodily harm, sexual harassment and assault are criminal in nature and violate the practitioner's sanctuary of a safe working environment.(302) Once the practitioner feels that their safety is jeopardised, they will no longer feel safe working in the SA EMS industry. EMS managers reported that during exit interviews with ALS practitioners, they identified the high crime rates in the country as being a culprit for the increased practitioner turnover.

"...but with the crime and the culture and the living conditions up in Johannesburg, people are looking for leaving the country rather than moving to Durban and Cape Town..."

Safety and security are major concerns for ALS practitioners and have been identified as major factors affecting recruitment, retention and motivation. The government, together with managers of EMS organisations, must ensure safer working and living conditions for

ALS practitioners. Further, EMS organisations must improve their occupational health and safety policy, processes and procedures. A lack thereof will continue to push ALS practitioners away from the industry until these problems are addressed decisively.

7.2.1.8 Hours of work

ALS participants did not favour their work hours as it often conflicted with their family and social life. Practitioners agreed that hours of work was key to retention (80.2%, n=1042) and motivation (87.3%, n=1134). A significant association was seen between the hours of work and practitioner retention ($p=0.001$) and motivation ($p=0.000$). The majority (93.3%, n=55) of EMS managers agreed that hours of work contributed to ALS practitioner motivation. Practitioners in both private and government sector EMS commented on their long hours of work with little or no remuneration for overtime work performed. Comments raised also related to the impact of working long hours, the increased risk of being involved in a motor vehicle accident, medical malpractice and poor social lives. They supported the need for working flexible hours saying this was more attractive.

“...I think the major attraction for me currently is working hours...to have a family life, because we always treat and look after everyone else, but our family is the most neglected one of all...”

ALS practitioners are not attracted to EMS organisations which do not regulate their working hours. Any time in excess of the twelve-hour shift encroaches upon the practitioner's rest period and may be in contravention of the Basic Conditions of Employment Act, Number 75 of 1997. Furthermore, practitioners work voluntary/involuntary overtime on their days off which shortens their rest period.(95) Shift work has been shown to affect a practitioner physiologically and psychologically.(309, 310) These practitioners are prone to fatigue, depression, anxiety and stress.(311) Working such hours without the prescribed rest period may also predispose the practitioner to medical negligence and liability.(312) Overtime work has also been linked to poor patient safety.(206) Practitioners dislike working extended hours because they claim it impacts negatively on their social and family life.

“... I find myself under stress most of the time. My time is consumed by work, because I work from – say from 08h00 to 16h00 and thereafter on standby, and that being from Monday up until Friday. Even on Saturday and Sunday you are still on standby for

ALS...”

Hours of work are a major contributory factor to ALS practitioner turnover.(120) Practitioners highlighted that early in their career the increased hours of work improved their exposure to patient care and as such was beneficial. However, as they progressed in life and had their own families, the increased hours of work were no longer favourable as it impacted negatively on their social lives.

The increased working hours with inadequate rest periods challenged the ALS practitioner’s ability to deliver quality ALS skills to the time critical patient.(204) The high acumen required for performing these skills is blunted by fatigue and exhaustion.(313) The practitioner who is routinely required to drive the emergency response vehicle to scenarios at high speeds is at extreme danger to him/herself and all other road users.(158)

“...in terms of the organisation, there is no regard for your personal consequences, your personal safety, sometimes you will only get three hours of sleep in a 48 hours period, maybe eat only once or twice, so medico-legally you are at increased risk of making a mistake or driving into a tree or who knows what, the company doesn't care, they just cover their part, but it's very demotivating”.

Shift work also conflicts with an enjoyable social life.(205) Practitioners invariably work during weekends, public holidays and school holidays. Flexible hours of work have shown to be successful in retaining HCWs as it acts as a non-financial incentive.(161, 163) However, in SA, practitioners are required to meet the organisation’s stipulated 190 hours of work per month and perform compulsory standby duty after operational hours. In addition, certain practitioners are forced to work overtime to improve their monthly salaries or to meet the organisational requirements.

“... they work either a long week, short week or two day, two night, four off systems, so that accounts to an average of 190 hours a month. So that's within labour legislation...are working on a standby shift system, and how it works is that the process or the policy is in place so they have to work 190 hours like everybody else, but we also limit them in terms of the standby. They are allowed to only work a maximum of 40 hours overtime a month, which is within the labour law. We don't allow them to go over that, and if they do, obviously we'll take corrective action over that, or we try and monitor those hours quite closely...”

Organisations must have a clear policy on hours of work in accordance with the Basic Conditions of Employment Act, Number 75 of 1997. The EMS manager is tasked with the implementation and monitoring of these policies. Herzberg considers organisation policies and supervision hygiene factors.(84) The absence of effective hours of work policies will cause practitioner dissatisfaction. A flexible work schedule is a non-financial incentive which stimulates employee motivation. However, EMS organisations must consider both financial and non-financial incentives as practitioner motivators.(258)

Increased hours of work have been identified as a factor which significantly contributes to ALS practitioner turnover. Given the different shift systems that ALS practitioners in the country work, an integrated organisational monitoring system is required to monitor hours of work. This would guide EMS managers to make appropriate decisions regarding ALS practitioners' hours of work.

7.2.1.9 Equal employment opportunities

Most of the participants agreed that equal employment opportunities in the workplace are pivotal to recruiting (91.3%, n=1186), retaining and motivating (90.2%, n=1172) ALS practitioners in the SA EMS industry. There was a significant association between equal employment opportunities in the workplace and the recruitment ($p=0.014$) and motivation ($p=0.001$) of ALS practitioners. The majority of EMS managers also agreed that this was essential to recruiting (88.3%, n=52), retaining (93.4%, n=56) and motivating (93.3%, n=55) ALS practitioners. The p-value of 0.000 for equal employment opportunity in the workplace and the EMS managers race groups implies that the null hypothesis was rejected. This significant relationship between equal employment opportunity in the workplace and EMS manager's racial background highlights that the different race groups of sample 2 have differing perceptions on equal employment opportunity practices and their role in ALS practitioner attraction. These findings were similar for retention ($p=0.002$) and motivation ($p=0.010$).

Practitioners also reported on the need for the practice of equality in the workplace. They felt discriminated against based on the colour of their skin and were not attracted to EMS organisations which practiced these principles.

"In South Africa today...there is very little room for advancement for certain race groups, and I think that is important, because a lot of appointments now are political rather than based on merit, and I think a lot of people are leaving because they don't see advancement – they don't see themselves advancing because from the outset they feel

that basically their days are numbered as far as improving themselves and advancing up the ladder because of all the problems in organisations.”

The Employment Equity Act, Number 55 of 1998, affirmative action policies and BBBEE in the workplace have specifically been designed to address discrimination in the workplace.(314) These regulations have however been restrictive in the EMS industry. These national imperatives have been shown to stifle employee growth and divide the workforce. Practitioners become despondent and therefore seek employment abroad.

Participants in the study did not favour discrimination in the workplace, but rather championed equal employment opportunities. The country's strict political agenda displayed in its affirmative action policies has marginalized 48.2% (n=626) of sample 1. More Whites work outside SA as compared to the other race groups in SA. In order to improve the recruitment of ALS practitioners, government must review all affirmative action policies.

Black SA trained ALS practitioners are less likely to leave the country as the employment climate is favourable to them.

“...those who choose to emigrate, the vast majority are white South Africans, and I think those things are causing emigration of South Africans...and feeling as if they don't have a place here anymore, and leaving for the sake of their kids...people don't feel as if they have a career path in the organisation. By virtue of the colour of their skin, they won't be promoted, no matter how hard they work. That's one of the reasons why people leave.”

Equal employment opportunities in the workplace are linked to the various tenets of organisational culture viz. organisational policies and practices on equal opportunities, interpersonal relationships in the workplace, EMS management practices, organisational communication policies and hours of work. It is therefore considered a hygiene factor according to Herzberg's theory.(109) Similarly, a lack of equal opportunities for all in the workplace will result in practitioner dissatisfaction. This indifferent treatment of practitioners further compounds the poor motivation problem. Creating a work environment that is employee-centred with equal employment opportunities for all promotes practitioner motivation.(163) Equal opportunity for all employees in the workplace is considered a driving force according to Lewin's Force-Field Analysis Theory.(86) Active employment equity, affirmative action policies and BBBEE are restraining forces contributing to high ALS practitioner turnover rates.(39) Moreover,

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equal opportunity in the workplace is associated with the EMS organisation's culture and its management. The revision and implementation of the national employment equity policies by EMS organisations is crucial to its workforce stability. However, a lack of implementation of these national norms by EMS managers threatens the retention of ALS practitioners and become a proponent for turnover.

7.2.1.10 Participative decision making

The overwhelming majority of participants agreed that PDM was essential to being recruited (92.9%, n=1207), retained (90.1%, n=1171) and would contribute to motivation (94.1%, n=1223) to EMS organisations in SA. There was a significant association between PDM and ALS practitioner recruitment ($p=0.000$), retention ($p=0.000$) and motivation ($p=0.004$). The entire EMS manager sample agreed that PDM was central to ALS practitioner recruitment and 98.3% (n=59) agreed to motivation. Moreover, chi squared tests showed a significant relationship between PDM and the EMS manager's age ($p=0.001$) and their highest EMC qualifications ($p=0.000$). This signifies that EMS managers with varying ages have differing perceptions on PDM and its effect on ALS practitioner motivation. These findings were also seen with the EMS manager's highest EMC qualification. Participants reported that being part of the decision making processes of the organisation made them feel welcome and those organisational practices attracted them.

"...participative management structures, where you feel you have a say in what's going on in the organisation...If you feel a part of what's happening, then obviously you want to do better...I would want to be asked what my opinion is, so be involved in decision making processes and be part [of the] processes and procedures, and not just kind of being told this is the rule and you will follow it...to feel involved and to feel like you make a difference...the motivation has to come from the top to set the stage to make sure the people are happy".

Upward communication is essential in the EMS sector as it gives practitioners a voice to highlight concerns regarding their work environment. Platforms as such encourage and improve collaboration between management and employees.(216) Through these enhanced participative processes, managers are able to elicit valuable employee feedback.(315) This process of employee involvement in organisational decision making reduces employee resistance.(316) It is imperative that managers are appropriately

trained to create regular opportunities for upward transmission of employee input.(217) Practitioners yearn to be part of organisations in which their contributions inform business practices. Practitioners become disillusioned and are not attracted to EMS organisations that do not consult employees for input on matters that involve them.

“...if you have a say in what suits you or what you would like to have on the ambulance, it just makes the work so much enjoyable and you feel like your opinion is valued, and again it goes to recognition, and that you are somehow contributing to the organisation, you feel part of it, whereas now we don't feel part of the organisation...”

Practitioner engagement is beneficial to the organisation as it improves their beliefs about the organisation, improves performance and they are encouraged to go beyond the requirements of the job.(317) Practitioner engagement is linked to their feelings of being valued in the organisation through effective channels of communication, opportunities of training and career development, equal employment opportunities and fair treatment, job satisfaction, the impact of the immediate supervisor, improved salary and additional benefits package, teamwork and collegiality, current stress levels and workload distributions.(318) Lewin's Force-Field Analysis Theory implies that PDM by ALS practitioners nurtures positivism and retention.(86) Some EMS organisations in the country have started PDM as a retention strategy. However, the impact that this has had on ALS practitioner retention is yet to be measured.

“...communication involving them with different projects within the company...the ALS seem to like that. It's all about creating that environment to try and get them more involved so that we can retain them. It's about taking ownership...”

According to Herzberg's theory, improving the level of responsibility of practitioners within the organisation motivates them intrinsically.(110) PDM improves their job satisfaction and motivates them for longer.(84) This non-financial incentive of stimulating practitioners' motivation levels is easily achievable by many small and large EMS organisations in the industry. Furthermore, there are no financial requirements for the implementation of this strategy.(241)

The involvement of ALS practitioners in the decision making process of the organisation, has been identified as a factor contributing to their recruitment, retention and motivation. EMS organisation policy development and implementation must address this situation in order to improve ALS practitioner retention.

7.2.1.11 Workload distribution

Participants in the focus groups commented on the high workloads, caseloads and the lack of having regulated breaks to recuperate. The shortage of ALS practitioners in many parts of the country means that existing practitioners must work harder for longer to meet community demands.(120) This however, has a negative impact on retention. Existing ALS practitioners experience burnout sooner and are pushed to resign.

Participants also commented on the importance of workload distribution in the EMS industry. Comments revolved around the fact that collegiality among all role players in the emergency environment was far superior in SA as compared to other countries. Certain practitioners felt that they were being over-worked whilst other members were not working as hard. A lack of fair workload distribution contributed to poor retention of ALS practitioners.

“...An operational practitioner also has increased workloads. In their daily task of skilful patient care, they have to also manage the base. There are always problems with staff, equipment, vehicles, and quality matters and not to mention the circus out there. The practitioner has to juggle all of this and more knowing at any time there might be an emergency call. In such situations, he/she has to drop what they are doing and respond to the emergency. When they return they may not be in the appropriate frame of mind to continue with what they were doing initially. This sort of chopping and changing is very stressful and demoralising to the practitioner. I can't be an ALS practitioner, a base manager and an administrator all at the same time. I need a change in scenery”.

The practitioner's workload is described in section 1.1.1. This high workload, coupled with the excessive working hours contributes to practitioner burnout syndrome.(219) Workload moderation and control has therefore been advocated to curb practitioner turnover and encourage longevity.(319) Increased workloads with inadequate rest periods also predisposes the ALS practitioner to motor vehicle accidents and malpractice.(120) It is also considered a restraining force that pushes practitioners away from the EMS industry.(39, 86) Increased workloads are linked to EMS organisational policy and practices, management enforcement of the Basic Conditions of Employment Act Number 75 of 1997 and total active hours of work.

EMS managers in the country require their ALS practitioners to multitask; unfortunately this is not viewed as increased workloads. Some EMS managers may also view this as an empowering exercise with many career development advantages.

“...somebody who's got a little bit of steam behind them. So you'll need like eager people, somebody who's able to diversify themselves within the company, somebody who's able to multitask, somebody who's able to be a leader within the industry, lead staff; those are some of the management traits...”

Increased workload has been identified as a contributor to ALS practitioner turnover. EMS managers must ensure that effective policies and procedures are in place to prevent ALS practitioner burnout due to increased workloads.

7.2.1.12 Emergency medical dispatch

ALS practitioners reported on the inappropriate use of their specialised skills. EMDs lacked appropriate training and this contributed negatively to their retention.

“...Dispatch definitely needs to be better trained or better educated, not sending two vehicles to the same call, or one from east to west, across borders when you don't need to...call taking grinded me to death everyday, so if you get sent to a call that is just absolutely absurd... An ideal organisation will send the ALS to the right call”.

EMD is the first link in the chain of survival. Subscribing to the Utstein formula of survival, ALS practitioners are dependent on the EMD to be directed to a critical patient.(320) However, in the SA context, various challenges hinder both effective EMD and emergency response. These constraints include endemic systemic decay, lack of or defective EMD equipment, lack of EMD training, language difficulties, lack of clear EMD guidelines and ALS practitioner dispatch protocols and lack of managerial support.

Given the limitations of the EMD, the ALS practitioner invariably responds to an emergency that does not warrant an ALS level of care.(225) This inappropriate utilisation of ALS practitioners by the EMD contributes to push factors and poor retention.(48) A-state-of-the-art EMD system with adequately trained personnel and managers functioning with clear guidelines is warranted to ensure effective and efficient service delivery.

Effective organisational policy governing the dispatch of ALS practitioners on emergencies by EMD personnel is essential to ensure the appropriate use of these scarce resources. The enforcement of these guidelines is duly the responsibility of the EMS manager. Furthermore, EMD is linked to sections 7.4.1.1, 7.4.1.2, 7.4.1.3, 7.4.1.5

and 7.4.1.6. The absence of these hygiene factors is associated with practitioner dissatisfaction.(84) The presence of these hygiene factors does not motivate practitioners. However, it is important that both hygiene and motivating factors are addressed to improve employee performance.(110)

Unskilled and ineffective EMD has been identified as a contributory factor to ALS practitioner attrition. EMS managers must ensure that the EMD is upskilled with the appropriate ALS dispatch protocols. This would prevent the inappropriate utilisation of the specialised ALS practitioner. Furthermore, it may dissuade ALS practitioner turnover.

7.2.1.13 Clinical governance

Practitioners commented on the lack of proper clinical governance policies and procedures within the EMS industry. Comments raised highlighted the HPCSA: PBEC's lack of regulation and provision over clinical governance guidelines for the industry. Certain EMS organisations however, have limited clinical governance structures. The implementation of clinical governance practices within these organisations was found to be inadequate. The patient report forms of BTEMC qualified practitioners were being scrutinised by lower qualified (e.g., CCA, NDEMC, AEA) practitioners. This was considered a push factor as ALS practitioners were being reprimanded for clinical governance matters by lower qualified personnel who were not qualified and therefore not familiar with the higher level scopes of practice.

"...there is a very weak clinical governance process, there is not that effective support in providing good clinical guidelines, frequent feedback; guys don't know, "How well am I doing at my job?"

The SA EMS industry lacks effective clinical governance guidelines due to the absence of a national regulatory framework. Certain organisations within the sector have implemented clinical governance guidelines to varying degrees, whereas the majority of public sector EMS organisations are plagued by outdated practices. Inconsistencies in clinical governance practices prevent ALS practitioner retention and prejudice the critical patient. Clinical governance guidelines are therefore a systematic approach to improving patient care.(321) Minimal or no proactive clinical governance measures contributes to ALS practitioner turnover.(48) Quality improvement in patient care in the SA EMS industry is negatively affected by increased caseloads and long working hours.

The development and implementation of clinical governance guidelines is within the ambit of EMS managers, however, these managers sometimes fail to implement such practices. In many EMS organisations within SA, clinical governance is linked to billing structures. ALS practitioners become frustrated by the inappropriate punitive measures implemented by these managers. This is therefore a push factor towards resignation.

7.2.1.14 Allied HCWs

Practitioners commented on the negative treatment they receive from the allied HCWs whom they engage with regularly. They were disgruntled by this poor recognition for the EMC profession which was pushing them away from the SA healthcare system and reducing retention.

“...the job as well is quite stressful... you go to every other hospital and get treated like shit by every other nurse or doctor...that is enough to make you disgruntled and drive you into leaving, because then you would want to go off to better...”

The EMC profession is not given due recognition and EMS managers believe that the disparity in treatment is causing a rift in the healthcare system and contributing to ALS turnover.

“...there is a huge disparity between the other professions and our profession. Now when I say that, why do we cater for accommodation and special dispensation in terms of nurses and doctors...There is much more given to nurses and doctors than to EMS, which seems to be a forgotten profession. So that paradigm shift needs to be taken from above, it needs to be driven as a national perspective...the nurses and the doctors, huge gaps exist where they don't understand what the scope of each practitioner is; they see one and they believe that that's it, that's one scope...”

Policies and procedures must be developed and implemented to improve ALS practitioner and allied HCWs interaction in an effort to curb the attrition of ALS practitioners.

7.2.1.15 Recreational facilities

This section discusses the availability of recreational facilities at the workplace as a

factor affecting the recruitment of ALS practitioners. Almost 80% (79.3%, n=1030) of the participants agreed that the availability of recreational facilities at the workplace was key to being attracted to an EMS organisation in SA. There was a significant relationship ($p=0.000$) between the availability of recreational facilities and ALS practitioner recruitment. More than eighty percent (83.3%, n=49) of EMS managers agreed that the availability of recreational facilities at the workplace was vital to recruiting ALS practitioners. There was a significant association ($p=0.022$) between the availability of recreational facilities and the highest EMC qualifications obtained by the EMS managers. This implies that EMS managers had differing perceptions of recreational facilities attracting ALS practitioners to EMS organisations based on the EMS managers highest EMC qualifications.

"...we don't have facilities for relaxation at work. No gym or games room or volleyball courts. We need to unwind after a bad case but can't because the facilities at work are appalling. I want to go to an organisation that is considerate to their practitioners and create recreational facilities".

"I think there is no recreational facilities at work, there is nothing to keep us entertained; there is no pool table, there's no games, there's nothing to play, there is no internet to use, there is nothing whatsoever...you are sitting in the ambulance, you eat your lunch in the ambulance, there is no microwave, there is no proper kitchen facilities, there is no proper toilet facilities, you go to a call and your clothes are dirty, you want to change and things"

The ALS practitioner attends to a high number of critical patients. Given the stress of these emergency scenarios, increased working hours and high caseloads, the practitioner needs recreational facilities at work. These facilities would enable practitioners to interact regularly, discuss common topics, share ideas and debrief sensitive cases with their colleagues. Recreational facilities act as non-financial incentives to attract practitioners. Against the backdrop of inadequate financial incentives, EMS organisations should offer non-financial incentives as recruitment strategies. These non-financial incentives are less financially challenging to cash strapped EMS organisations.

7.2.1.16 Job descriptions for ALS practitioners

Practitioners during the focus group sessions remarked on their elaborate job description. They thought that all the other functions of personnel management, fleet management, quality assurance, *etc.* prevented them from performing their primary role of patient care. This ornate job description contributed negatively to their retention. This section is linked to sections 7.3.1.5 and 7.3.1.8.

“...Stop trying to make them do ten other jobs at the same time. You are employed to treat patients primarily, well then treat patients; here's your equipment, here's your resources, go treat your patient...”

Certain EMS managers in the private sector have demystified the job description for ALS practitioners. In their organisation, ALS practitioners only concentrate on patient care and not on all other operational related functions. These EMS managers however, cannot report on the effectiveness of this retention strategy.

“...the paramedics themselves have got no management function, they don't have to look after staff, they don't get involved in the day to day running of the ambulances. All they have to do is look after their own little ambulance and their case load. They don't even report to the managers. I don't want them getting involved in doing paperwork, that's not what they trained for. They trained as qualified paramedics that are what I need them for. I don't want them getting stuck with making sure the ambulance's tyres are not smooth and nonsense like that”.

Practitioners require a concise job description in line with their training. Elaborate demands by certain organisations are pushing these practitioners abroad. These practitioners complain of being overwhelmed with non-ALS related functions.

The sections above discussed factors related to the ALS practitioner's work environment and their effect on encouraging their recruitment, retention and motivation. These were based on the findings from the four study sample groups. The factors identified are important recruitment, retention and motivation strategies and must be adopted by SA EMS industry. The following section discusses the factors related to the ALS practitioner's employment package.

7.2.2 ALS practitioner employment package

Factors identified for the ALS practitioner employment package include: remuneration, additional benefits package and paid time off.

7.2.2.1 Remuneration

The majority of participants agreed that appropriate remuneration was necessary to being recruited (94.3%, n=1225), retained (88.9%, n=1155) and motivated (88.7%, n=1153) in the SA EMS sector. A significant association between remuneration and ALS practitioner recruitment ($p=0.007$), retention ($p=0.000$) and motivation ($p=0.000$) was found. This was supported by 100% (n=60) of the EMS manager sample for recruitment, 96.6% (n=57) for retention and 98.4% (n=59) for motivation. Furthermore, the chi squared test showed significant relationships between ALS practitioners remuneration and the EMS manager's highest level of education ($p=0.000$) as well as their highest EMC qualifications ($p=0.043$). This signifies that differently educated EMS managers have differing perceptions of remuneration and ALS practitioner retention. These findings were also found with the EMS manager's highest EMC qualifications.

Remuneration was the most important part to the employment package and sparked strong discussions amongst the sample. Participants argued for a market related salary saying it was a huge contributory factor to recruitment. Participants suggested that salaries should be based on the ALS practitioner's qualification(s) and their years of experience. OSD was also discussed and the negative impact it has had on the recruitment of ALS practitioners was highlighted.

"...talking about salary, because obviously we can't all live off passion alone, although I think some of us work in the passion industry...it has to be a liveable wage, and once you start things like school and kids and things like that, and looking at having your own home, ja, that money doesn't last very long. So, I don't think people are looking to have an extravagant lifestyle, but just being able to cope. Current salaries are pathetic, I can't do this anymore."

The theories of Maslow and Vogt *et al.* identify salary as an example of how the basic physiological needs can be met.(88, 107) This idea was supported by the implementation of OSD in 2007 by the SA public sector as a strategy to improve recruitment and retention.(70) However, when OSD was implemented in the EMS sector

in 2009, it created a rift between existing and new ALS practitioners.(322) Practitioners employed prior to 2009 were being paid a higher salary compared to their newly employed counterparts. This salary disparity contradicted the aims of OSD and therefore opposed ALS practitioner recruitment and retention. Practitioners have thus asked for a review of the OSD as a remediation process to improve recruitment and retention. Salary disparities also exist between the private and public EMS organisations.

Some private EMS organisations have implemented a tiered remuneration system for ALS practitioners based on their qualification and years of experience. These organisations have also taken into consideration the practitioners' post graduate qualifications as compared to the public based OSD system which did not cater for such provisions.

"...ALS will come into the organisation and will fall into either a level 1 to a level 4 category of remuneration. This category criterion is based on level of qualification, so there is emphasis placed on the BTEMC and MTEMC practitioner, where they are fast-tracked up those levels to ensure that we retain the senior individuals. The remuneration is also commensurate to the level of experience and the number of years in practice, so I think we don't treat all ALS practitioners the same way and we have a tiered approach with regards to remuneration..."

Many EMS managers also expressed grave difficulty in trying to attract ALS practitioners due to their willingness to move regularly. The public EMS sector was not equipped to deal with the improved salary offered by international organisations. Managers also highlighted challenges with budgetary constraints and were therefore unable to create ALS practitioner posts, even at the OSD level.

"It is very difficult to attract ALS practitioners because we cannot meet the salaries that they are being offered in the international market, and also what was happening is that they are very mobile...We are currently sitting with just less than a third of our work force...So, the first challenge is our budget, meaning funded posts, it's a challenge..."

Participants also commented on wanting to earn a liveable salary as compared to the meagre salaries they were earning. The poor salaries and the current OSD system in the government EMS sector resulted in many ALS practitioners leaving their employment. Moreover, a salary disparity amongst ALS practitioners created an unfriendly working environment as practitioners doing the same job were being paid different salaries.

“...My personal reason for leaving my position in South Africa was finances. I was not able to buy a house, I could barely make ends meet, I could barely pay for things. I have got a child as well, so I have got to take care of his needs. And long term as well, where would I get in ten years, for the salary that I was earning here; maybe paying off my debt and then saving nothing...”

EMS managers reported that ALS practitioners' salary was a sensitive matter that needed much discussion. Certain managers argued that a salary war was not appropriate and sustainable for the EMS industry. Generally, practitioner salary in the private EMS sector was on a grading scale based on qualifications and experience. However, these salary systems had no provisions for masters and doctorate qualified practitioners.

“...in terms of sustainability for ALS and sustainability of the business...It doesn't set the right culture within the industry, it really doesn't. We've got the standard salary structures based on years of experience and qualifications...”

Furthermore, EMS managers in the private sector believed that an average monthly ALS salary was approximately twenty-five thousand SA rands (R25 000). These managers were of the firm belief that due to the scarcity of these skills, practitioners were demanding higher salaries compared to practitioners in similar professions. Managers were also despondent as they exhausted all retention strategies.

“...In any private industry it's got nothing to do with what you can do, it's the amount of money you can pour into the system. If they've got the money they won't leave you. Right now, in the private industry, you will not retain the paramedic under R25 000.00 a month. It is only because of the scarcity of ALS that you have to pay that kind of salary. There's many nurses around, many pharmacy guys, but ALS is so scarce that they can demand that kind of salary, and if you need ALS or you want ALS in your service you have to pay or go without. I've got no idea what else can be done to keep the practitioners here, because no matter what you offer them they will leave for a better salary every single time, it doesn't matter. They don't go for better job, better job security. They don't leave for that, they only leave for financial incentives...”

The public EMS sector has however been plagued by the ineffective OSD system.

Managers are unable to negotiate ALS salaries anymore and therefore feel helpless regarding the exodus of practitioners. These managers also expressed concerns that the review of the OSD system for EMS is not being expedited.

“...The challenge has been – it was not this bad, I must say, until 2009, when the OSD was implemented...That means, an ALS that ideally would have been recruited at level 10 can only come and do the same job, if not more for a level 7 salary. So, that on its own just created an exodus, and even the ALS that we train within a month or two after they qualify, they leave...”

“...we first need to look at the way the OSD is structured, because the Occupational Specific Dispensation actually shot us in the foot...So we need to look at a re-structuring of OSD...”

Maslow's theory considers financial security a lower order need.(105) According to Herzberg's theory, compensation is a hygiene factor rather than a motivator.(110) The Vogt *et al.* theory identifies money as a physiological need(114) and Lewin's theory considers a market related salary with no disparities to be a driving force towards practitioner motivation.(86) Although remuneration may not be considered a motivator, the lack of a proper salary structure encourages dissatisfaction.(84) Practitioners are in need of a market related salary to sustain and improve their quality of life. Certain EMS organisations may experience difficulty in implementing such financial incentives. These cash strapped organisations should therefore implement non-financial incentives as a strategy to stimulate practitioner motivation prior to embarking on financial measures.(249) However, strategists believe that a balance of both financial and non-financial incentives is required to satisfy and improve employee motivation.(259)

Remuneration for ALS practitioners is a strong factor related to their recruitment, retention and motivation. However, practitioners in the public sector were concerned about salary disparities and the negative impact on ALS practitioner recruitment and retention created by OSD.

7.2.2.2 Additional benefits package

The majority of participants agreed that a comprehensive additional benefits package was indispensable to recruiting (88.0%, n=1144), retaining (94.6%, n=1229) and

motivating (89.2%, n=1159) ALS practitioners in the SA EMS industry. There was a significant association between being offered an additional benefits package and ALS practitioner recruitment ($p=0.000$), retention ($p=0.000$) and motivation ($p=0.000$). Most EMS managers also agreed that offering a comprehensive additional benefits package to ALS practitioners would contribute to their recruitment (96.6%, n=57), retention (93.3%, n=55) and motivation (96.6%, n=57). A p-value of 0.002 was obtained for an additional benefits package offered to ALS practitioners as a factor which encourages recruitment and the highest EMC qualifications obtained by EMS managers indicating that the null hypothesis be rejected; there was a significant relationship between allowances and the highest EMC qualification obtained by EMS manager participants. Practitioners commented on the need for allowances as a recruitment strategy. They argued that allowances boosted their basic salary.

“Different allowances are important as it adds to our salaries but also recognises what we do. Danger allowance, uniform allowance and yes meal allowances. I think we deserve them and it will attract me”.

Certain EMS organisations in the country offer ALS practitioners a limited additional benefits package. Most government EMS organisations offer their employees an additional benefits package in the form of contributing 66% towards the practitioner’s medical aid fee and providing a limited housing subsidy. Some private EMS organisations offer their practitioners danger, uniform, travel and subsistence allowances. However, no SA EMS organisation offers a complete benefits package as compared to their international counterparts. To compare an international recruitment strategy, Hamad Medical Corporation (HMC) in Qatar offers their ALS practitioners the following package: a fully furnished house with no rental payable, travel allowance, utilities allowance, free medical cover and schooling allowance for three children under the age of 18 years. Similar allowance packages were being offered by other employers in the Middle East. South African practitioners have naturally been attracted to these packages.

Given the comprehensive additional benefits package offered by EMS organisations internationally, the SA EMS sector must improve their packages in order to attract ALS practitioners. The inadequate ALS practitioner salary highlighted in section 7.2.2.1 further creates divides in earning. Therefore, financial incentives in the form of additional benefits package are crucial as they improve attraction. These allowances act as subventions and increase the gross salaries of practitioners. The SA EMS industry may

not be able to match the additional benefits package offered by the international EMS fraternity, however due consideration must be given to improving these packages to encourage recruitment, retention and motivation.

As the additional benefits package contributes to a practitioners remuneration package, it therefore needs to be commensurate with market related values as it influences the employee's quality of life.(120) The lack of additional benefits package or inadequate allowances contribute to push factors forcing ALS practitioners away from the SA EMS industry.(39) These can also be driving forces and promote employee retention.(116) Recent measures by some EMS organisations to retain ALS practitioners involved allowances and profit sharing. The results of these strategies were not available.

"...nobody wants to really work on a mine, so you going to give them a salary allowance... downfall that I can think of within our organisation is that we don't offer a 13th cheque, and we never have...has also been generous enough to share their profits off – to share their profits of the financial year with the staff..."

Holistic additional benefits package have been shown to be an important recruitment, retention and motivation strategy for ALS practitioners. The SA EMS industry will not be able to compete with their international dollar, pound and euro related salaries. However, EMS organisations in SA must have a comprehensive additional benefits package plan to curb turnover.

7.2.2.3 Paid time off

Participants agreed that being offered a comprehensive paid time off package was vital to recruiting (80.1%, n=1041), retaining and motivating (92.3%, n=1200) ALS practitioners in the SA EMS industry. There was a significant association between paid time off packages and ALS practitioner recruitment ($p=0.000$) and motivation ($p=0.006$). Most EMS managers agreed that a complete paid time off package was important to recruiting (93.4%, n=56), retaining (93.3%, n=56) and motivating (98.4%, n=59) ALS practitioners. There was a significant association between the EMS manager's racial background and paid time off packages offered to ALS practitioners as a recruitment ($p=0.004$) and retention ($p=0.001$) strategy. Furthermore, a chi squared test showed a significant relationship ($p=0.009$) between offering ALS practitioners a comprehensive paid time off package and the EMS manager's highest EMC qualification. This signifies that EMS managers with varying EMC qualifications have differing perceptions on

providing ALS practitioners with a comprehensive paid time off package as a motivation strategy.

The presence of various paid time off packages was seen as an attraction.

"...But in my organisation leave always seems to be a problem. Yes we have the different leave packages like sick leave and vocational leave and family responsibility leave. We even have study leave, but nobody explains to us how this works We have accumulated leave which the manager does not approve because there is no one else to take your shift. So if I was looking for a job that has clear leave plans..."

As much as being at work and serving the community is important, leave periods are also important for the ALS practitioner. A comprehensive paid time off package should include vocational leave, sick leave, study leave, maternity/paternity and family responsibility leave as a recruitment strategy.(256) Provisions for such paid time off have been included in the Basic Conditions of Employment Act, Number 75 of 1997.(92) These paid time off packages are essential to attracting ALS practitioners.(154) The availability of paid time off packages are also linked to the ALS practitioner's ability for career development. Opportunities for education and training require the practitioner to be granted study leave to complete such programmes. The inability to secure study leave will therefore impact directly on the practitioner's ability to progress academically.

Further, practitioners felt that due to the long working hours with inadequate rest days, many employees were experiencing burnout syndrome. The lack of effective paid time off policies was instrumental in this poor governance. Although the various paid time off packages were available, the practitioner's applications for leave was not approved by the EMS manager. This is linked to practitioner shortages.

"...90 percent of the staff are absolutely burnt out...But even then, when you request leave, it is denied...we've got an attractive leave package...it would definitely be a retention factor, that is the company looking after you, so if we care about your wellbeing, you are an asset to us, it's mutually beneficial".

According to Lewin, the availability of paid time off packages is a driving force to retention.(116) The offering of paid time off packages is a non-financial incentive and should be offered by financially restrictive countries as a retention strategy.(161, 163) Many EMS organisations are however faced with a shortage of ALS practitioners. If a

practitioner is granted leave from work, then there is no replacement. Some EMS organisations therefore opt to pay their practitioners for their vocational leave rather than awarding them the required time off work. This practice however leads to a vicious cycle and eventually practitioner burnout.(157, 158, 319)

A comprehensive paid time off package has been identified as an effective recruitment, retention and motivation strategy for ALS practitioners. EMS organisations must comply with the Basic Conditions of Employment Act, Number 75 of 1997 regarding paid time off. Remuneration, additional benefits package and paid time off packages were identified as key contributors to ALS practitioner recruitment, retention and motivation. SA EMS organisations must ensure that their employment package is comprehensive enough to attract, retain and motivate ALS practitioners.

7.2.3 Professional development for ALS practitioners

In this section, professional development categories related to ALS practitioner recruitment, retention and motivation are deliberated. These categories include: promotion opportunities, job stability, career development, employee recognition, coaching and mentorship, health and wellness and a diversified work environment.

7.2.3.1 Promotion opportunities

Participants agreed that promotion opportunities in the workplace were crucial to recruiting (87.8%, n=1141), retaining (91.6%, n=1190) and motivating (91.3%, n=1186) ALS practitioners. A significant association between promotion opportunities and ALS practitioner recruitment ($p=0.000$), retention and motivation ($p=0.000$) was found. Most EMS managers were in agreement that promotion opportunities for ALS practitioners was a significant recruitment (98.3%, n=58), retention (96.6%, n=57) and motivation (96.7%, n=57) tool. Further, there was a significant relationship between promotion opportunities and the racial background of the EMS managers for recruitment ($p=0.036$), retention ($p=0.031$) and motivation ($p=0.000$). This implies that the null hypothesis is rejected. Meaning that there was a significant relationship between the EMS manager's racial background and promotion opportunities being offered to ALS practitioners as a recruitment strategy.

Participants commented on their need to be promoted within the organisation and these opportunities attracted them to be recruited.

“...felt like I was stagnating where I was...I thoroughly enjoyed my job, I really did, but I was just not going anywhere...”

Promotional opportunities for ALS practitioners within EMS organisations are essential recruitment strategies. These opportunities act as non-financial incentives and encourage career pathways for practitioners.(163) It also creates opportunities for diversification within the EMS organisation promoting retention. Practitioners are encouraged by opportunities for promotion because of a new job description, status that accompanies the new job, the increased responsibility, improvements in their salary structure which improves their morale and provides a change in scenery thereby reducing monotony.(92) However, in the present SA employment climate, in light of the Employment Equity Act, Number 55 of 1998 and affirmative action policies (section 7.2.1.9), promotional opportunities are restrictive.

Certain EMS organisations in the country have implemented career advancement opportunities for newly employed ALS practitioners. These practitioners may become managers but also have the opportunity of maintaining their clinical skills through being on standby. This attractive opportunity may result in increased workloads for the ALS practitioners.

“...all of our management structures within the organisation require a minimum of an ALS qualification, so in essence any member wishing to progress within the ranks of the organisation into management has to have ALS and above, so this serves as an attraction point for our ALS practitioners, in the sense that they come in and enter usually into operations, but they are quickly fast-tracked and developed into management positions, which then allows them to progress up the management ladder. In conjunction with that, all of these operations managers which are ALS practitioners have access to response vehicles, and this allows them to have the best of both worlds. So our practitioners can grow their leadership and management capabilities, but they still have access to patient management and clinical skills which allows them to stay current with their clinical and academic abilities but also grow as an individual in the profession itself...”

Participants also commented on the need for promotion opportunities within EMS organisations and that the lack of promotion opportunities contributed to them leaving. However, given the restrictive hierarchical structures of the sector, practitioners felt that

these opportunities were limited.

“... it becomes about retention, but if I know that there is a good progression pathway and there are opportunities within an organisation, then I'll be more inclined to go that route and stay there...”

The need to grow within an organisation is critical to the practitioner's development. Maslow's Hierarchy of Needs Theory identifies an individual's growth and development as the pinnacle of self-actualisation.(107) Obstacles to the practitioner excelling and reaching their full potential will impact negatively on retention. Vogt *et al.* further postulate that a lack of promotional opportunities will stifle personal, professional and organisational growth.(108) Lewin's theory is supportive and suggests that promotion opportunities are driving forces that promote retention.(86)

The lack of promotion opportunities is categorised as a push factor and thus pushes practitioners away from the SA EMS industry.(48) Hackland and Stein's(3) and Binks'(120) research on ALS practitioner retention in SA further supports the theory on using promotion opportunities to improve practitioner retention.

Promotion opportunities have been identified as a positive factor contributing to ALS practitioner retention. However, HR practices in the country are influenced by the Employment Equity Act, Number 55 of 1998, BBBEE and affirmative action practices. These policies and practices must be reviewed in order to encourage ALS practitioner retention. Creating opportunities for practitioners to upskill within the organisation may be suitable for all EMS organisations. Education and training in the form of in-service training may have minimal cost implications on the EMS organisation, but have enormous skills transfer to the practitioner coupled with motivation.

Promotion opportunities for ALS practitioners were supported as recruitment, retention and motivation strategies by the study's samples. Furthermore, literature supports these findings.(1)

7.2.3.2 Job stability

Job stability was a contributory factor to effective ALS practitioner recruitment (90.5%, n=1176) and retention (92.7%, n=1205) as majority of the participants agreed. A significant association between job stability and ALS practitioner recruitment ($p=0.000$) and retention ($p=0.000$) was found. Further, most EMS managers that participated

supported this recruitment (100%, n=60) and retention (98.3%, n=59) strategy of job stability for ALS practitioners. There was a significant relationship ($p=0.028$) between the EMS manager's racial background and job stability being offered to ALS practitioners as a recruitment strategy.

Certain participants in the focus groups commented on job stability as a contributory factor to ALS practitioner recruitment. The discussions primarily revolved around bigger companies in the EMS industry being more stable and the smaller ones being less stable.

"...the big factor that plays a role in the decision is job security, so based on the size of the organisation, based on the number of years that the organisation has been operational for and their track record..."

Many ALS practitioners seek employment with job stability to increase their probability of retaining their jobs for an extended period. Historically, in the SA EMS industry, the public EMS and certain larger private EMS organisations have provided job stability. However, the smaller EMS organisations were considered to be "fly by night" and less probable of providing job stability. Job stability benefits the employer and employee, alike. This 'win-win' situation ensures the employer has a fixed skilled workforce and the employee will in turn receive a constant flow of income for services rendered.(137) Practitioners can improve their job security options by advancing their knowledge, skills and experience. Job stability can also be increased if the practitioner moves to a location which is scarce in the specific skills.

Job stability of ALS practitioners is linked to the organisation's image and business practices.(323) Practitioners want to work for a reputable company in the industry. However, business practices of affirmative action may reduce the practitioner's probability of securing job stability in the larger EMS organisations. Job stability of ALS practitioners is also closely associated to the work environment *viz.* work conditions, management structures and functions, resources, teamwork, effective workplace communication and involvement in the organisation's decision making processes.(324)

Anecdotally SA EMS organisations apply the business formula of profitability to the practice of EMC. This involves the practice of maximising profits and minimising costs. However, these practices pressurise and threaten certain practitioners who may then resign and move abroad. Maslow's theory regards job stability as a safety need.(105) Vogt *et al.*'s theory supports Maslow's Hierarch of Needs Theory.(114) Practitioners

need consistent work that is sustaining with a steady flow of income in order to be retained. Lewin's Force-Field Analysis Theory further acknowledges that the job stability of ALS practitioners is a driving force to retention.(86) The lack of job stability is highlighted as an organisational push factor.(299)

Job stability is important to ALS practitioners and thus improves recruitment and retention. SA EMS organisations must improve employment practices and offer job stability to all ALS practitioners.

7.2.3.3 Career development

Career development was essential to recruiting and retaining ALS practitioners. Nearly all participants agreed that career development was an important link to recruiting (93.5%, n=1215) and retaining (91.6%, n=1190) them to SA EMS organisations. There was a significant association between career development and ALS practitioner recruitment (p=0.000) and retention (p=0.000). EMS managers concurred that career development was critical to recruiting (100%, n=60) and retaining (96.7%, n=58) ALS practitioners.

ALS practitioners also discussed recruitment factors which included career development pathways. The participants felt that EMS organisations had an important role to play in developing career paths for employees as it stimulates an employee to grow and prevents monotony in the workplace.

"I think they have got to see the position as something in which they can advance, then they come in at a lower level. There should be some sort of a well-structured advancement programme in place. If you look at some of the overseas services: Australia, the UK, Canada, they bring people in and they have a structured system of training, in which the individual will get to a certain level within three or four years. This doesn't seem to exist in South Africa. You come into the service as a BAA, 15 years later you could be still sitting at that same level..."

Furthermore, the majority of participants agreed that training and education opportunities in the workplace were an important component to recruiting (94.3%, n=1226), retaining (91.0%, n=1183) and motivating (92.3%, n=1200) ALS practitioners to EMS organisations in SA. There was a significant association (p=0.000) between training and education and ALS practitioner recruitment, retention and motivation. EMS managers

also agreed that further ALS practitioner training and education played an essential role in their recruitment (100%, n=60), retention (96.3%, n=57) and motivation (95.0%, n=57).

“...I want to go to a company that recognises training as a key factor in improving service delivery. In the government area this is lacking. All ambulances must have ALS and there must be a plan to train everyone”.

The constellation of career development theorists believe that both the employee and employer are equally responsible for the employee's growth.(325) Career development is within the ambit of HRD in organisations. However, these departments have been latent in the EMS industry by inhibiting the philosophy of lifelong learning. Organisations with clear career development policies and succession planning will be attractive to ALS practitioners in the job market. Certain EMS managers have implemented career development measures within their organisations to recruit and train ALS practitioners internally. Managers have also initiated bursary programmes for students studying at HEIs in an effort to improve recruitment strategies.

“...we recruit both internally and externally, again touching back to the value that we place on the ALS scope, is that our - for the last ten odd years, we've had our internal School of Emergency and Critical Care and we've run the CCA advanced life support programme during this period of time. So we offer 24 spots on that particular programme and for the majority of those ten years we've allocated 75% of those seats and above to internal AEA staff. So there's been a great focus for internal development of staff along the ALS scope, and that I think also lends credence to the morale within our staff as compared to various other providers, because we have the ability to develop internally as well as recruit externally. So I think our primary mechanism has been the internal development of staff and then subsequent placement into operations...internal recruitment we have looked at the universities, so we've started something this year which is the bursary programme that we've initiated, where we sponsor the fourth year student, and I think I've got currently one in the system at DUT where we've sponsored that student from second year, and they sign a work back agreement with the organisation to work back the period that we've sponsored their education. So that assists us in having a consistent pipeline of ALS into the [company's] operation”

Although EMS managers have implemented bursary programmes to improve the attraction of ALS practitioners and encourage career development, certain candidates do

not meet the HEI's entrance requirements for the programmes. These challenges have stagnated organisations bursary programmes.

"...successfully put ten bursaries out last year and this year we put out four, because again the other challenge that we have, the secondary schooling levels...we have a huge challenge in terms of people meeting the programme prerequisites, being matric pure mathematics and science...and so trying to recruit people to join our programmes, even if it's bursary programmes is difficult..."

Career development is also related to promotion opportunities. Practitioners want to progress academically with the intention of climbing the succession ladder in the workplace. Unmistakably, career development is an important strategy to improve ALS practitioner recruitment. EMS organisations must improve their career development opportunities in order to attract ALS practitioners.

"...I think that's one of the biggest bones of contention is that there is no process by which people can improve their qualifications and progress within their working environment...I think people are leaving certain services to go to other services, for the purpose of advancement..."

Lewin's Force-Field Analysis Theory highlighted that career development through training was a driving force that encouraged ALS practitioner retention.(86) The lack of organisational educational incentives pushes ALS practitioners away from the EMS industry.(48) Practitioner support for education and training by EMS organisations is a non-financial incentive and empowers employees which fosters retention.(163) In certain EMS organisations, in-service career development opportunities exist in the form of regular ALS meetings/forums and monthly morbidity and mortality meetings. This method of reporting on a difficult emergency scenario allows ALS practitioners to learn from other practitioners' experiences. Career development can also take place in the form of ongoing mentorship programmes within the organisation. These strategies have to be clearly formalised by EMS management and adequately publicised to all practitioners.

"...every second month I have an ALS meeting within the region so we can discuss issues like that. We've got flight meetings which we encourage all of the ALS to attend so we can understand, because we obviously do a lot of case management stuff within the flight meetings..."

One private EMS organisation has provided ALS practitioners with career development opportunities in the form of short courses. This also ensures that the practitioner earns the necessary continuous educational units to remain compliant with the HPCSA: PBEC requirements. The extent to which this strategy has reduced practitioner turnover is yet to be determined.

“...we have continuous educational programmes for our practitioners, in that they attend bi-annually ACLS, PALS, ITLS, PLS refresher programmes, and these are paid for by the company so they just need to attend. They're booked accordingly and then they will attend these courses as their qualifications expire. So I think as compared to other organisations that require their ALS to stay CPD compliant as an individual...”

Certain public sector EMS organisations have also embarked on career development practices. These practices are successful but unfortunately only undertaken with small numbers of ALS practitioners in restricted areas.

“...we make sure that they get different training, like they go get all their CPD points, we give that all for free so that when they need their points for the HPCSA all the CEUs are done and the cost is carried by us. The other thing is for staff improvement, so say for example the guy's NDEMC, we pay for him to become a BTEMC, so there that is a training incentive as well. And if a guy's already a BTEMC then we give him training incentives to do ACLS, PALS, those types of incentives...”

Career development was identified as a strong factor contributing to ALS practitioner recruitment, retention and motivation. EMS organisations must develop and implement effective policies to encourage career planning for ALS practitioner retention.

7.2.3.4 Coaching and mentorship

Participants agreed that a formal coaching and mentorship programme was necessary to recruit (86.9%, n=1129) and motivate (92.4%, n=1201) ALS practitioners to the EMS industry in SA. There was a significant relationship between a coaching and mentorship programme and ALS practitioner recruitment ($p=0.000$) and motivation ($p=0.000$). EMS managers also agreed that a coaching and mentorship programme was needed in order to recruit (100%, n=60) and motivate (93.4%, n=56) ALS practitioners. The chi squared test showed a significant relationship ($p=0.017$) between providing coaching and

mentorship programmes for ALS practitioners and the EMS managers highest EMC qualifications obtained. This signifies that EMS managers with varying EMC qualifications have differing perceptions on providing ALS practitioners with a coaching and mentorship programmes as a motivation strategy. Participants were in favour of coaching and mentorship programmes for newly recruited ALS practitioners. The lack thereof makes the new recruit uncomfortable and less productive.

“When I first arrived at [company’s name] in Qatar, I had to undergo a three-month mentorship programme as a newly recruited ALS practitioner. This programme has shown significant results with ALS practitioners employed from other countries viz. USA, Australia, SA and New Zealand. This form of induction was important as it assisted me to cope with the stressors of the new job, environment, company and people...mentorship is very important, starting right from the bottom and as a person progresses and gains experience...”

According to Herzberg’s theory, organisational policies on coaching and mentorship programmes are considered hygiene factors.(84) Such factors may not motivate a practitioner, but their absence may cause dissatisfaction.(110) Coaching and mentorship programmes are required, as highlighted by the practitioners.(326) Professional attitude has also been identified as a gap for new ALS practitioner graduates. Effective coaching and mentorship programmes will help promote and address such deficiencies. Coaching and mentorship programmes are non-financial incentives which stimulate motivation.(171)

The increasing need for coaching and mentorship programmes is a discernible factor linked to recruitment and motivation, as identified by the study samples . EMS managers must ensure that coaching and mentorship programmes are designed and implemented for new recruits.

7.2.3.5 Employee recognition

Most EMS managers agreed that ALS practitioner recognition was vital to their recruitment (98.3%, n=1277), retention (95.0%, n=1235) and motivation (96.7%, n=1257). The chi squared tests showed significant relationships between ALS practitioners recognition and the EMS managers’ age (p=0.040) and their highest EMC qualification (p=0.000). This signifies that EMS managers with varying ages have differing perceptions on ALS practitioner recognition and its effect on ALS practitioner

motivation. These findings were also found with the EMS manager's highest EMC qualification. Employee recognition was considered a major category as the topic raised much discussion. Contributions by the participants revolved around the lack of recognition by management and other personnel for the work that they perform. Recognition of ALS practitioners was a strong retention factor as it attracted much discussion during the focus group discussions. Practitioners felt that they were being treated indifferently and were not given the recognition they deserved. They were therefore inclined to leave the organisation due to a lack of recognition.

"...staff are made to feel like they are worthless, treated like dirt, that you are easily replaceable, if you don't like it, then go get employment elsewhere...It's nice to work for an organisation where you are made to feel that you are an asset to them..."

Maslow identifies employee recognition as an essential strategy for the employee to meet esteem needs.(107) Vogt *et al.* further highlights employee recognition as a pivotal link to employee retention.(85) The poor recognition of employees however is a push factor and repels employees away from the SA EMS industry.(48) Binks highlighted that 77% of the participants in his research study were concerned about the lack of recognition and appreciation by managers.(120) Receiving positive feedback from managers, patients and colleagues makes the ALS practitioner feel valued and appreciated. This form of positive reinforcement is intangible and is a non-financial incentive contributing to practitioner attraction.(163) Certain EMS managers have identified that by recognising the ALS practitioner for the work they do, they will be able to improve recruitment.

"...firstly the one mechanism that we utilise to firstly attract our ALS practitioners which leads to retention, is we place key emphasis on the value of our ALS practitioners, so as compared to various other providers you'll find that our organisation has a larger footprint of ALS providers comparatively, and that is because we place value on optimal patient care, so we prefer to have as much ALS interaction with the patient as possible. Secondly, our ALS are all placed on dedicated response vehicles, so we try as far as possible to ensure that we have a response vehicle fleet footprint availability, so there's lots of issues with other providers and the government sector where - I'm obviously speaking generally here, but the view is that the ALS scope is not as appreciated as it should be..."

Certain EMS managers recognise that ALS practitioners don't get the recognition they deserve for the job that they do. They believe that the practitioner is consumed by the organisation and EMS profession. However, very little is done to correct this anomaly.

"I know and I understand, and I think the area we are battling with as an organisation; is the issue of employee recognition. A bulk of the ALS, being myself, I could relate that the system and the organisation did not recognise the role and jobs they provide..."

Recognition of ALS practitioners has been highlighted as an important recruitment, retention and motivation strategy. EMS organisations must design and adopt effective policies which recognise the accolades of ALS practitioners in order to encourage retention.

7.2.3.6 Health and wellness

Health and wellness in the workplace is commonly linked to workplace safety and injury prevention, disease prevention and wellness programmes.(244) These programmes are aimed at reducing organisational costs. However, in the SA EMS sector there is a lack of an appropriate framework governing employee health and wellness. Certain EMS organisations have limited programmes. Available programmes also lack the support of management and are very poorly publicised to practitioners. Given the high risks and challenges the SA ALS practitioners experience daily, they are prone to burnout syndrome. The lack of such programmes unfortunately pushes practitioners away from the SA EMS industry.

"...I think what is lacking in our service is counselling. A lot of people have psychological problems, some because of what they see everyday, and some because of the problems at home...nobody wants to listen..."

The ALS practitioner's wellbeing is essential for an effective EMS system. Therefore, effective policies and procedures on employee health and wellness are of paramount importance to all EMS organisations. In order for such programmes to be effective, a total company effort is required. EMS managers must be forthcoming and allow the practitioner time-off to attend the respective counselling sessions. Managers should also be upskilled to identify high-risk practitioners and refer them for counselling. In many instances, counsellors are not available as required by the EMS sector. However, certain

EMS organisations in the country have made these resources available to their practitioners.

“...We've got a social worker on site, so the social worker is available. And then we've got a whole lot of counsellors that are available to them. So, it is not telephonic counselling, we've got face to face counselling as well...”

The health and wellness of ALS practitioners is important to the delivery of EMC. These programmes should include components of social wellness, emotional wellness, spiritual wellness, environmental wellness, occupational wellness, intellectual wellness and physical wellness.(244, 245, 327) As such, EMS managers must ensure that health and wellness programmes are available to cater for practitioners' needs.

7.2.3.7 A diversified work environment

Practitioners commented on the need for a diversified work environment in order to keep them stimulated and to encourage retention. Given the challenges ALS practitioners face on a daily basis, as highlighted in previous sections, practitioners preferred a diversified work environment with rotations at different work stations. Options included management, education, short term contracts, the communication centre and HEMS in order to retain them.

“... And I think rotating paramedics would be great in future, because you would be quite bored working on the same shift on the same vehicle for the next ten years, so move them around, into management, into HEMS...”

Certain factors within the practitioner's existing work environment are constant and are based on their specific discipline. However, certain practitioners find these routines monotonous and prefer a regular changing work environment to encourage retention. Five of the commonest EMC disciplines highlighted by practitioners included operations, education, remote site medicine, management and aeromedical services (HEMS) (Figure 7.1). A diversified work environment would include practitioners working on a rotational basis in these identified disciplines for a specific period of time. This would prevent monotony in the workplace. Diversifying the workplace would attract and retain ALS practitioners, advance teamwork and collegiality, improve channels of communication, allow practitioners to be part of the organisation's decision making

process and encourage knowledge sharing.

One private EMS organisation has recently commenced a rotational system in an effort to diversify practitioners' work environments. However, the programme is in its infancy stage and no clear deductions can be made yet.

"...Then there's an encouragement for our ALS, which we've already implemented now three months ago...So that's been a decent factor to try and retain staff..."

Diversification as an ALS practitioner retention strategy is also implemented in certain government EMS organisations. These managers report above average results.

"...Some of the things that we've done at the college is we have ensured that there is sufficient skills retention shifts; so even though they're teaching, we make sure that they do enough road trips to keep their skills, because you don't want to lose your practical skills, so we make sure they have enough skills. Then we make sure that they're rostered on shifts on the helicopter so that they can work there as well..."

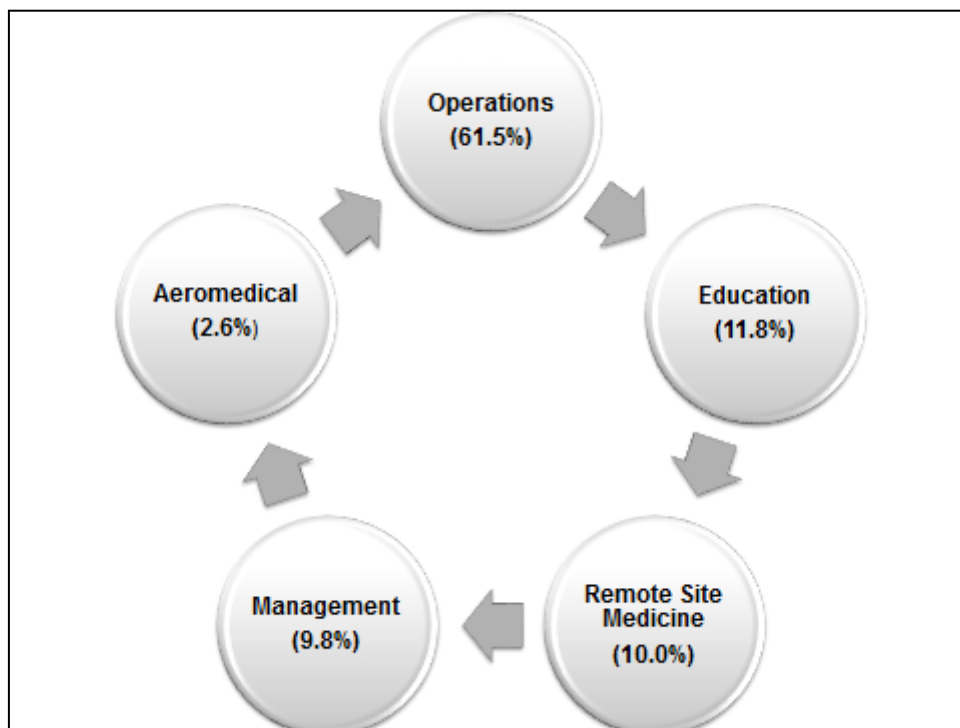


Figure 7.1: ALS practitioner diversified work environment

A diversified work environment for ALS practitioners has been identified as a strong

retention factor. It is therefore advisable for EMS managers to design and implement effective policies to guide the rotation of ALS practitioners between the different disciplines in the organisation.

7.3 Limitations of the study

The lack of readily available information on ALS practitioner recruitment, retention and motivation in SA posed a challenge to the research. The lack of/limited research in the EMS field in the country further added to the problem as the ALS practitioners' knowledge of research processes was limiting. Further, the lack of an updated central registry/database of all ALS practitioners was challenging. Certain prospective participants may not have been accessible. The HPCSA: PBEC would be the appropriate organisation to establish a database with all ALS practitioners. The database can be updated annually with registration renewals. We believe that, despite this, we had a representative sample. Despite the lack of availability of a comprehensive list of ALS practitioners, every effort was made to access all graduates in the study population. Social media, professional bodies, privately held ALS databases, HEIs and EMS organisations were recruited to assist with distribution of the survey questionnaires.

The postal service strike during the data collection phase of the study may have impacted on the return rate of the survey questionnaires, although we believe that we had a satisfactory level of engagement. During the study, ALS practitioners may have also changed location and work environments. Due to the remote locations of ALS practitioners, certain practitioners may not have been accessible. This study may not have addressed all ALS practitioner related recruitment, retention and motivation factors. However, the findings of this study serve as a baseline for future studies.

The target population for the study included all SA trained ALS practitioners who graduated between 1988-2012 and managers of SA EMS organisations that employed these practitioners. Data from 1300 participants was eventually utilized for the study. SA, being the study setting, is unique in its geography, climate, population size, disease profile, social constraints, economic climate, political ideologies, technological advances, educational systems and legal stance. The findings of this study may therefore not be generalizable to ALS practitioner populations in different settings, outside of SA.

The selected mixed method paradigm could be considered a weakness as it was expensive and time consuming to conduct. Further, the researcher had to be knowledgeable about both qualitative and quantitative methodologies in order to

appropriately mix the different paradigms. Although ALS practitioners from diverse backgrounds were included in the focus groups, factors such as selective memory, telescoping, attribution and exaggeration must be taken into consideration when reviewing the qualitative data.

The use of closed-ended questions in the survey instruments of phase one of the study may be considered a limitation. However open-ended questions have been shown to produce invalid responses as compared to closed-ended questions. Further, open-ended questions have a greater rate of non-responses as compared to closed-ended questions. Due the varying responses that open-ended questions generate, extensive coding has to be conducted. The data gathered in the first phase of the study was interrogated by the participants of the focus groups and semi-structured interviews.

Data gathered during focus group discussions may be considered bias and non-generalisable. However this was overcome by conducting seven focus group discussions until saturation point was achieved. The participants of the focus groups were selected on specific criteria (section 4.3.2) The results of the focus group discussion are presented in Chapter six.

Internal validity was achieved through trustworthiness of the data gathered. Data collected in the first phase of the study was presented to participants in the second phase as a means of determining the accuracy of the findings and to stimulate discussion. Trustworthiness in the study was based on achieving credibility, dependability, confirmability and transferability. Credibility of data collection was heightened through prolonged interaction with information rich participants achieving an in-depth understanding of the ALS practitioner recruitment, retention and motivation factors. The Hawthorne and novelty effect of the participants were counter-acted through a meet and greet session prior to data collection. Participants were informed that for the purposes of the research, all candidates were equal and no special treatment will be allowed to any participants. Dependability during the data collection process of phase two was ensured through stepwise replications of the processes during the focus group and interview sessions.

The accuracy and relevance of the data gathered was assessed by the researcher and audited by the statistician to ensure confirmability. Generalisability within SA was further ensured through replicating focus group sessions until data saturation was achieved. The convergence of quantitative and qualitative data during the interpretation phase of the research added to the methodological triangulation of the study. Three models of generalisability were taken into consideration for this study; statistical generalisation,

analytic generalisation and transferability. The entire ALS practitioner population was included in phase one of the study (N=1657). A 78.9% response rate was achieved indicating that the findings from the study could be generalised to the entire SA ALS practitioner population. The analytical generalisation model is embedded within confirmatory strategies which address the credibility of qualitative research. The transferability model of the findings of the study was ensured through processes of detailed note taking and recording of all focus group and interview sessions. The recordings were then transcribed verbatim maintaining descriptive validity.

7.4 Conclusion

Chapters five and six presented the main findings of phase one and two of the research study. It has been made clear that a broad category of factors identified above influences ALS practitioner recruitment, retention and motivation. Categories identified for ALS practitioner recruitment, retention and motivation include: the work environment, employment package and professional development. The study also identified 19 recruitment factors, 25 retention factors and 16 ALS practitioner motivation factors.

Chapter Eight: Conclusions and recommendations

8.1 Conclusion

ALS practitioners are a crucial part of healthcare systems internationally, yet they are a very scarce skill. This study identified 19 ALS practitioner recruitment factors, 25 retention factors and 16 motivation factors which were deemed important. There was a strong link between recruitment, retention and motivation factors: the factors that attract an ALS practitioner to an EMS organisation in SA will also contribute to their retention and motivation.

ALS practitioner recruitment, retention and motivation were influenced by factors which highlighted the work environment, employment package and professional development. Remuneration, EMS management and resources were amongst the strongest factors identified. EMS organisations must comprehensively improve these factors in order to encourage ALS practitioner recruitment, retention and motivation in the country.

8.2 Recommendations

This study has identified several recruitment, retention and motivation factors. The three recommendations presented below are based on these findings.

1: Improved work environments for ALS practitioners

The EMS sector together with its regulatory body should implement minimum standards of operation to improve the work environment for practitioners. A sanitary working environment acts as a non-financial incentive to attract, retain and motivate ALS practitioners (section 7.2.1.2). These measures can also be implemented by resource poor organisations. A poor work environment impacts negatively on service delivery.

EMS managers should be appointed to managerial positions based on their training, skills and experience (section 7.2.1.3). The present practice of appointing EMS managers based on their EMC qualifications should be revised. Supported by senior management, existing EMS managers must be upskilled with the necessary knowledge and skills to effectively manage SA EMS organisations.

The ALS practitioner should also be supplied with the necessary functional equipment to perform their specialised skills (section 7.2.1.4). Repair logs must be kept for dysfunctional equipment. A reputable service company must maintain a minimum

turnaround time. The EMS manager should further acquire spare equipment to ensure that the practitioner is able to function at their potential and that service delivery is not hampered. Real-time stock level monitoring systems should be implemented by SA EMS organisations to prevent stock out scenarios. This would prevent ALS practitioner frustration and demotivation as stock out situations would be averted.

EMS managers, through effective communication of the organisation's policies and procedures, should create an atmosphere of teamwork (section 7.2.1.5). Managers must also create opportunities for practitioners to gather and share ideas which will improve their social interaction. Workload analysis must also be done for all ALS practitioners to ensure even workload distribution (section 7.2.1.11).

It is recommended that SA EMS organisations design and implement concise SOPs that are all encompassing of safety in the workplace (section 7.2.1.7). These SOPs should be propagated to all ALS practitioners to encourage a safe working environment. Regular, inter-departmental meetings should be conducted between EMS managers, Department of Local Government and the South African Police Services to foster safer communities and improve ALS practitioner safety during emergency calls in high-risk areas.

SA EMS organisations should also design and adopt a comprehensive infectious disease protocol in an effort to protect their ALS practitioners (section 7.2.1.7). These EMS organisations must create access for advanced defensive driving programmes for all ALS practitioners.

Proper workplace communication systems should be established between EMS managers and ALS practitioners in an effort to ensure top-down communication (section 7.2.1.6). Furthermore, policy makers should consult with ALS practitioners and all other stakeholders to design and implement a comprehensive organisational communication policy to alleviate feelings of input not being valued in the organisation.

SA EMS organisations should design and implement policies on ALS practitioner work hours including: rostered shifts, standby and overtime work (section 7.2.1.8). These policies must be in line with the Basic Conditions of Employment Act, Number 75 of 1997. Proper regulatory systems must be implemented by these organisations to monitor the practitioners' work hours and ensure adequate rest periods. Due consideration must be given regarding flexi-hours of work for ALS practitioners in an effort to improve recruitment, retention and motivation.

The government must review its Employment Equity Act, Number 55 of 1998, affirmative action policies and BBBEE practices in the country. Recruitment, retention and

motivation difficulties identified in this study are also highlighted in other professions and disciplines (section 7.2.1.9). Until the government reviews these policies, the problems experienced will worsen.

EMS policies should be all-encompassing of ALS practitioner inclusion in the organisational decision making processes to augment recruitment, retention and motivation (section 7.2.1.10). Practices of the organisation must enhance regular consultation with the practitioners to improve collaboration.

SA EMS organisations should make provisions for recreational facilities available at the workplace (section 7.2.1.15). These facilities will help improve collegiality between the employees and encourage teamwork. Further this will also improve the practitioner's fitness levels by creating opportunities for regular exercise sessions.

EMS organisations should ensure that the ALS practitioner is working within the confines of the Basic Conditions of Employment Act, Number 75 of 1997. These organisations must also ensure that they employ the appropriate number of ALS practitioners based on their employment plan. Workload analysis and monitoring systems must be implemented by these organisations to ensure that there is an even distribution of workload (section 7.2.1.11).

EMDs should be trained in emergency medical dispatching (section 7.2.1.12). Focus areas of training must include emergency call taking, triaging and emergency medical dispatch. The EMS organisations in SA must design and implement clear guidelines for the dispatch of ALS practitioners to emergency scenarios.

The government should create a clinical governance framework for the EMS sector (section 7.2.1.13). Given the national blueprint on clinical governance, EMS organisations must then design and implement effective clinical governance policies. It is through this framework that EMS organisations will improve the quality of patient care and ensure high standards.

The HRD of EMS organisations should design a clear job description for ALS practitioners based on their job analysis (section 7.2.1.16). EMS managers must then ensure that the ALS practitioner is functioning within these job descriptions.

2: Improved employment package for ALS practitioners

The existing OSD system for the EMS industry in the country must be reviewed as a matter of urgency to curb the loss of ALS practitioners (section 7.2.2.1). Gross salary

disparities created by OSD must be corrected to ensure that a market related salary is offered to all ALS practitioners. These must be competitive and based on their qualifications and experience in the industry. Furthermore, the practitioner's salary should be reviewed annually and linked to a performance management system.

The existing additional benefits package offered by certain EMS organisations in the industry must be reviewed with the intent of improving the package (section 7.2.2.2). In addition to this, EMS organisations must offer all ALS practitioners a comprehensive additional benefits package. These packages act as subvention to the salaries.

All EMS organisations in the country must review their paid time off policy in an effort to ensure that ALS practitioners are offered a comprehensive package (section 7.2.2.3). The leave application and awarding process must be scrutinised to ensure that ALS practitioners are not being prejudiced in the process. This process must be audited annually to ensure it is procedural. Leave planning measures must be introduced to ensure that ALS practitioners are granted vocational or study leave. EMS organisations must also ensure that replacement staff is made available when ALS practitioners go on leave.

3: Improved professional development opportunities for ALS practitioners

EMS organisations in SA should review their organogram and clearly identify positions for ALS practitioner promotion (section 7.2.3.1). Furthermore, public departments should review all frozen posts in the EMS sector and make them available for the promotion of ALS practitioners. Additionally, the SA EMS sector should provide ALS practitioners with job stability to enhance recruitment and retention (section 7.2.3.2).

The HR department of EMS organisations should ensure that a career development plan is compiled for all ALS practitioners (section 7.2.3.3). The HRD officer must ensure that appropriate career development opportunities are made available to ALS practitioners. Additional support systems (e.g., financial, study leave and allowances) must be made accessible to ALS practitioners to ensure practitioners are able to grow academically.

EMS in SA should design and implement a comprehensive coaching and mentorship programme for newly qualified ALS practitioners (section 7.2.3.4). Mentors must attend training programmes. These organisations must also have a registry of mentors and ALS practitioners who need to attend such programmes. Furthermore, the government sector must unfreeze posts for the creation of mentorship programmes.

EMS managers should attend training programmes to equip them with the knowledge and skills to deal with employees (section 7.2.3.5). These organisations should also design and implement a comprehensive employee recognition programme which propagates employee-centeredness.

A framework for the health and wellness of ALS practitioners should be designed by the government (section 7.2.3.6). The EMS organisations must then design organisational policies on health and wellness. Moreover, these organisations must implement health and wellness programmes for ALS practitioners.

Furthermore, EMS organisations should ensure that ALS practitioners are rotated monthly at the different work stations within the organisations (section 7.2.3.7). These may include operations, management, education, aeromedical services and the Communication Centre, etc. This will prevent monotony of the job and equip the practitioner with the knowledge of various organisational operations.

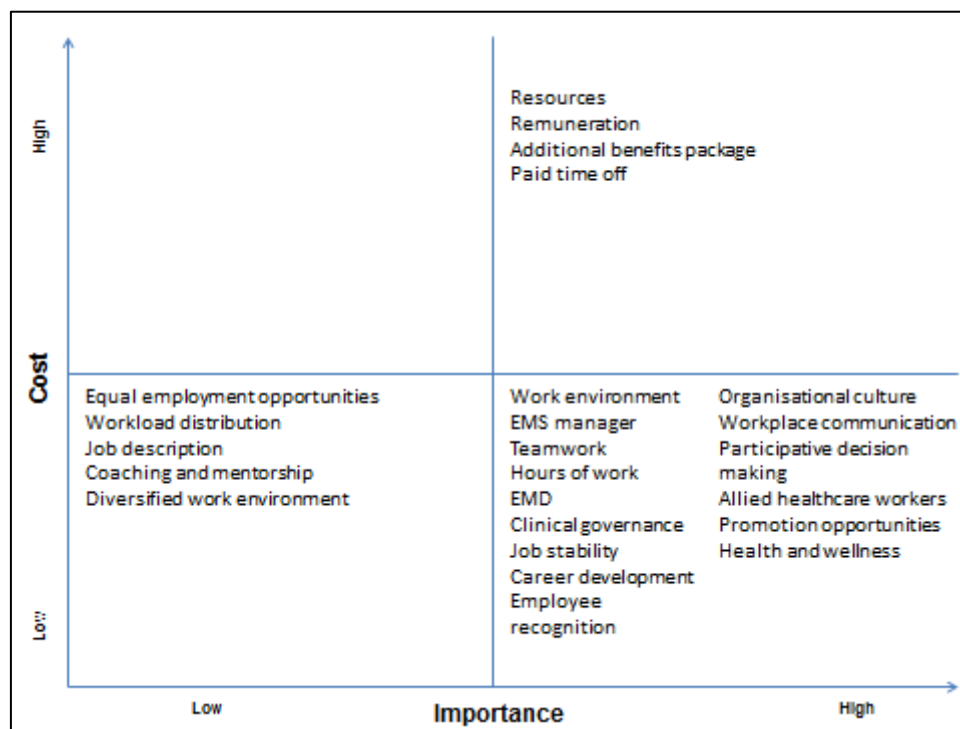


Figure 8.1 Cost versus importance matrix

The cost versus importance matrix will assist EMS managers implement these recommendations (Figure 8.1). A large percentage of the recruitment, retention and motivation factors identified may be categorised as high importance but can be

implemented with minimal or no cost to the EMS organisation.

8.3 Recommendations for further research

Based on the findings of this research study, the following related areas deserve attention:

- The operational life span of ALS practitioners in SA remains unresearched. A detailed study investigating the factors which shorten or prolong the operational life span of the practitioner in the context of SA is needed.
- SA ALS practitioner salary has not received much attention from the research fraternity in the past. Establishing exactly what a market related salary for ALS practitioners in SA would benefit the industry.
- A specific job description for ALS practitioners based on the various disciplines of employment in the industry needs to be researched. A study of such nature must take into consideration the practitioners' roles and responsibilities together with the EMS organisation's needs.
- Effective clinical governance systems for EMS organisations must be explored further with the intent of national implementation.
- Coaching and mentorship programmes for ALS practitioners must be investigated with the intent to include internship programmes for these practitioners.
- The impact of job rotation for ALS practitioners must be explored further.
- Skills training for EMS managers in the context of the SA healthcare system must be explored.

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Appendices

Appendix A: Skills sets of emergency medical care practitioners

	CAPABILITY	BAA	AEA	CCA/ NDEMC	ECT	BTEMC
	Airway Management					
1	Finger sweep	√	√	√	√	√
2	Head-tilt-chin lift	√	√	√	√	√
3	Jaw-thrust	√	√	√	√	√
4	Suctioning of the airway	√	√	√	√	√
5	Airway obstruction removal techniques	√	√	√	√	√
6	Use of Magill's forceps		√	√	√	√
7	Oropharyngeal airway insertion	√	√	√	√	√
8	Nasopharyngeal tube airway insertion		√	√	√	√
9	Cricoid pressure		√	√	√	√
10	Orotracheal intubation			√		√
11	Nasotracheal intubation			√		√
12	Blind nasotracheal intubation			√		√
13	Digital endotracheal intubation			√		√
14	Retrograde intubation			√		√
15	Supraglottic extraglottic airway devices insertion			√	√	√
16	Orogastric tube insertion			√	√	√
17	Nasogastric tube insertion			√	√	√
18	Needle cricothyroidotomy		√	√	√	√
19	Surgical cricothyroidotomy			√		√
20	Rapid sequence intubation, only with capnography & ventilator					√

Oxygenation and Ventilation

21	Oxygen therapy	√	√	√	√	√
22	Nebulisation (medicated)		√	√	√	√
23	Use of pulse oximetry		√	√	√	√
24	Needle thoracentesis		√	√	√	√
25	Bag valve mask ventilation	√	√	√	√	√
26	Bag valve tube ventilation	√	√	√	√	√
27	Mechanical ventilation			√		√
28	Use of PEEP			√		√
29	Use of capnography			√	√	√

Circulatory Management

30	Blood pressure measurement	√	√	√	√	√
31	Peripheral intravenous cannulation - ≥ 8 year old patients only		√	√	√	√
32	Peripheral intravenous cannulation - all age categories			√	√	√
33	External jugular vein cannulation			√	√	√
34	Femoral vein cannulation			√		√
35	Intra-osseous insertion			√	√	√
36	Umbilical vein cannulation			√	√	√
37	Fluid administration		√	√	√	√
38	Intravenous drug administration			√	√	√
39	Intraosseus drug administration			√	√	√
40	Subcutaneous drug administration		√	√	√	√
41	Intramuscular drug administration			√	√	√
42	Endotracheal tube drug administration			√		√
43	Drug infusions and use of infusion devices			√		√
44	Use of syringe drivers			√		√
45	Use of non-invasive blood pressure monitors		√	√	√	√
46	External haemorrhage control including use of tourniquet	√	√	√	√	√
47	Use of pneumatic anti-shock garment - legs only		√	√	√	√
48	Use of pneumatic anti-shock garment - entire			√		√
49	Automated external defibrillation	√	√	√	√	√
50	Manual defibrillation (asynchronous)		√	√	√	√
51	Synchronised cardioversion			√		√
52	Vagal manoeuvres			√		√
53	Central line management			√		√
54	Transcutaneous cardiac pacing			√		√
55	3 Lead ECG monitoring		√	√	√	√
56	12 Lead ECG monitoring			√		√
57	Fibrinolysis					√

ECG Rhythm Analysis

58	Normal sinus rhythm		√	√	√	√
59	Sinus bradycardia		√	√	√	√
60	Sinus tachycardia		√	√	√	√
61	Ventricular fibrillation		√	√	√	√
62	Ventricular tachycardia		√	√	√	√
63	Asystole / PEA		√	√	√	√
64	All other emergency cardiac dysrhythmias			√		√

Obstetric Management

65	Normal vaginal delivery	√	√	√	√	√
66	Prolapsed cord management	√	√	√	√	√
67	Breech delivery management (scope specific)	√	√	√	√	√
68	Mal presentations management (scope specific)	√	√	√	√	√
69	Preterm labour management (scope specific)	√	√	√	√	√
70	Obstructed labour management (scope specific)	√	√	√	√	√
71	Fundal massage	√	√	√	√	√
72	Bimanual compression			√		√
73	Tocolysis			√		√

General

74	CPR (adult, child, infant & neonate)	√	√	√	√	√
75	Patient clinical assessment	√	√	√	√	√
76	Vital sign assessment	√	√	√	√	√
77	Finger prick and blood glucose measurement	√	√	√	√	√
78	Cervical spinal clearance			√	√	√
79	Application of cervical collar	√	√	√	√	√
80	Application of head blocks	√	√	√	√	√
81	Application of spider harness	√	√	√	√	√
82	Spinal immobilization using scoop stretcher & long spinal board	√	√	√	√	√
83	Spinal immobilization using an extrication device	√	√	√	√	√
84	Application of splints including the traction splint	√	√	√	√	√
85	Application of vacuum mattress		√	√	√	√
86	Use of stretchers	√	√	√	√	√
87	Urinary catheterization			√	√	√
88	Basic wound care and application of dressings	√	√	√	√	√
89	Suturing		√	√		√
90	Declaration of death: withdrawal of resuscitation efforts		√	√	√	√
91	Declaration of death: withholding resuscitation	√	√	√	√	√
92	Administration of medication as per current HPCSA protocol	√	√	√	√	√
93	General patient inter-facility transfer	√	√	√	√	√
94	Intensive care transfer			√		√
95	Neonatal transfer (non-intubated patient)		√	√	√	√
96	Neonatal intensive care transfer			√		√

Source: HPCSA: PBEC(328)

BAA: Basic ambulance assistant, AEA: Ambulance and emergency assistant, CCA: Critical care assistant , NDEMC: Nationals Diploma in Emergency Medical Care , ECT: Emergency Care Technician, BTEMC: Bachelor of Technology in Emergency Medical Care, PEEP: Positive end expiratory pressure, ECG: Electrocardiogram, PEA: Pulseless electrical activity, CPR: Cardiopulmonary resuscitation, HPCSA: Health Professions Council of South Africa.

Appendix B: ALS practitioner questionnaire

Topic: An investigation into recruitment, retention and motivation of advanced life support practitioners in South Africa.

Dear Participant,

Thank you for taking the time to complete this survey questionnaire which will take approximately 10 minutes. Your input is greatly appreciated. Only complete this survey if you are a South Africa qualified advanced life support practitioner. Participant qualifications may include Critical Care Assistants, National Diploma in Emergency Medical Care (or equivalent) and Bachelor of Technology in Emergency Medical Care (or equivalent).

Emergency Medical Services worldwide are dependent on the right number of motivated and skilled advanced life support (ALS) practitioners to care for critical patients. However, these organisations are struggling to effectively recruit, retain and motivate ALS practitioners over an extended period. The increasing demand for ALS practitioners and the decrease in supply has created voids in certain parts of the country. This study therefore aims to identify factors which affect ALS practitioner recruitment, retention and motivation. Results from this research study will be used for research purposes only. I would like to assure you that the information you provide will be kept *strictly confidential*.

If you have any queries or would like further information about the research, please feel free to contact the researcher via the following methods;

Telephone: +27 31-3735267

Fax: +27 86-5323454

Email: ajethq@gmail.com

The promoters can be contacted via email;

Dr R Bhagwan: bhagwanr@dut.ac.za

Professor Lee Wallis: leewallis@bvr.co.za

The Research Ethics Committee of the Faculty of Health Sciences at the University of Cape Town can be contacted as below;

Room E52-24 Groote Schuur Hospital, Old Main Building, Observatory, 7925

Telephone: +2721 4066626

Fax: +2721 4066411

Email: shuretta.thomas@uct.ac.za

Once you have read this information letter in its entirety, understand its contents, signed the consent letter below and agree to voluntarily participate in the survey, then kindly proceed to the survey below.

Statement of agreement to participate in the research

I (Mr, Miss, Mrs, Ms, Dr, Prof)_____ (full name of the subject - in block letters) have read this document in its entirety and understand its contents. Where I have had any queries or questions, these have been explained to me by _____ (full name in block letters) to my satisfaction. Furthermore I fully understand that I may withdraw from this study at any stage without any adverse consequences. I, therefore voluntarily agree to participate in this study.

Participant's name: _____ Participant's signature: _____ Date: _____

Witness name: _____ Witness signature: _____ Date: _____

Researcher's name: _____ Researchers signature: _____ Date: _____

Supervisor's name: _____ Supervisors signature: _____ Date: _____

Once you have completed the questionnaire, please return, in the self-addressed envelope, enclosed. The cost of the postage has been paid by the researcher. Completed questionnaires may also be faxed to +27 865323454 or emailed to ajethq@gmail.com. The survey questionnaire must only be completed once, either online or in hard copy. When completing the questionnaire online, please utilize your seven digit HPCSA registration number.

You are encouraged to complete the survey questionnaire online at <https://docs.google.com/spreadsheet/viewform?formkey=dG9tTG5OaG5DYjdRWXJKLXpVZmdjN0E6MQ>

Please answer the questions in the survey as completely and honestly as possible. I hope you find completing the survey enjoyable, and thank you for taking time to assist me.

Signed by candidate

Padarath Gangaram

HPCSA Number _____

Section A: Demographical data

Instructions to the participant: For the following questions, please indicate your choice with a *tick* (✓) in the appropriate block provided.

1. Please specify your South African race group. (*For statistical purposes only*) (*Tick* (✓) *1 option only*)

Code	South African race group	Tick (✓)
1	Black	
2	White	
3	Coloured	
4	Indian	
5	Other	

Specify other: _____

2. Please indicate your age in years.

3. Please specify your gender. (*Tick* (✓) *1 option only*)

Code	Gender	Tick (✓)
1	Male	
2	Female	

4. Please specify your highest level of education. *(Tick (√) 1 option only)*

Code	Highest level of education	Tick (√)
1	Primary School	
2	Secondary School	
3	Matric / Grade 12	
4	Tertiary	

5. Please specify your highest Emergency Medical Care qualification obtained. *(Tick (√) 1 option only)*

Code	Highest Emergency Medical Care qualification	Tick (√)
1	Critical Care Assistant	
2	National Diploma in Emergency Medical Care or equivalent	
3	Bachelor of Technology in Emergency Medical Care or equivalent	
4	Master of Technology in Emergency Medical Care or equivalent	
5	Doctor of Philosophy or equivalent	
6	Other	

Specify other: _____

6. Please specify your highest independent Medical Rescue qualification obtained (to be completed by Critical Care Assistants only). *(Tick (√) 1 option only)*

7.

Code	Independent Medical Rescue qualification	Tick (√)
1	Basic Medical Rescue or equivalent	
2	Intermediate Medical Rescue or equivalent	
3	Advanced Medical Rescue or equivalent	
4	Other	

Specify other: _____

8. Please specify the institution at which you completed your highest Emergency Medical Care qualification? *(Tick (√) 1 option only)*

Code	Emergency Medical Care qualification	Tick (√)
1	Lebone College of Emergency Care	
2	Netcare 911 School of Emergency and Critical Care	
3	University of Johannesburg	
4	College of Emergency Care- KwaZulu-Natal	
5	Durban University of Technology / Technikon Natal / Durban Institute of Technology	
6	Cape Peninsula University of Technology	
7	Provincial Government of the Western Cape College of Emergency Care	
8	Central University of Technology	
9	Other	

Specify other: _____

9. Please specify any additional Emergency Medical Care certifications / qualifications obtained. *(Any combination of choices is possible)*

Code	Additional Emergency Medical Care certifications / qualifications	Tick (√)
1	Advanced Trauma Life Support	
2	Paediatric Advanced Life Support	
3	Advanced Cardiac Life Support	
4	International Trauma Life Support	
5	Aviation Health Care Providers Course or equivalent	
6	Other	

Specify other: _____

10. Please specify the discipline of any other formal qualifications obtained. *(Any combination of choices is possible)*

Code	Any other formal qualifications	Tick (√)
1	General Management	
2	Human Resource Management	
3	General Law	
4	Public Health Management	
5	Disaster Management	
6	Project Management	
7	Education	
8	Occupational Health and Safety	
9	Call Centre Management	
10	Not Applicable	
11	Other	

Specify other: _____

11. Please specify your total years of Emergency Medical Care experience.

12. Please specify your years of experience as an advanced life support practitioner.

13. Please specify the Emergency Medical Care categories in which you have gained experience. *(Any combination of areas may be selected)*

Code	Emergency Medical Care category you have experience	Tick (✓)
1	Operations	
2	Management	
3	Education	
4	Medical Rescue	
5	Public Relations / Media Liaison	
6	Communication Centre / Call Centre Agent	
7	Disaster Management	
8	Special Events	
9	Remote Site Medicine	
10	Aeromedical	
11	Medical Sales Representative	
12	Accident and Emergency Department	
13	Other	

Specify other: _____

14. Please specify the Emergency Medical Care category in which you are currently employed. (Select the most appropriate option, Tick (✓) 1 option only)

Code	Current Emergency Medical Care category	Tick (✓)
1	Operations	
2	Management	
3	Education	
4	Medical Rescue	
5	Public Relations / Media Liaison	
6	Communication Centre / Call Centre Agent	
7	Disaster Management	
8	Special Events	
9	Remote Site Medicine	
10	Aeromedical	
11	Medical Sales Representative	
12	Accident and Emergency Department	
13	Other	

Specify other: _____

15. Please specify if you are currently employed in or out of South Africa? (Tick (✓) 1 option only)

Code	Currently employed in or out of South Africa	Tick (✓)
1	In South Africa	
2	Out of South Africa	
3	Both in and out of South Africa	

If you are employed out of South Africa, please complete question 15 and then proceed to SECTION B.

Participants employed in South Africa are requested to kindly complete questions 16 to 20 before proceeding to SECTION B.

16. Please specify the country of your current employment (If employed outside of South Africa).

17. Please specify your current South African province of employment. *(Tick (√) 1 option only)*

Code	South African province of current employment	Tick (√)
1	Gauteng	
2	KwaZulu-Natal	
3	Western Cape	
4	Northern Cape	
5	Eastern Cape	
6	Free State	
7	North West	
8	Limpopo	
9	Mpumalanga	

18. Please specify your current Emergency Medical Service sector of employ. *(Tick (√) 1 option only)*

Code	Emergency Medical Service sector of employment	Tick (√)
1	Government	
2	Quasi Government	
3	Private	
4	Non-Government Organisation	

19. Please specify the community type where you work. (Tick (√) 1 option only)

Code	Community type where you work	Tick (√)
1	Rural	
2	Urban	
3	Peri-urban	
4	Other	

Specify other: _____

20. Please specify the average number of hours of overtime you work per month

21. Please specify your reason for working overtime (Tick (√) 1 option only)

Code	Reasons for working overtime at primary job	Tick (√)
1	My basic salary is inadequate	
2	Compulsory overtime as required by my employer	
3	I am passionate about my job	
4	Other	

Specify other: _____

Five-point Likert scale

Instructions for completing the remaining sections

Section B must be completed by all advance life support practitioners. Please read each statement carefully, decide to what degree you agree or disagree with each statement and mark your answer on the Likert scale. Please answer all the statements and choose **only one** answer per statement.

Guide for interpreting responses

Strongly Agree: You strongly agree with the statement and feel *very positive* about the statement.

Agree: The statement is acceptable to you. You feel *positive* about the statement.

Neutral: *Unable* to decide if you agree or disagree with the statement.

Disagree: The statement is not acceptable to you – you feel *negative* about the statement.

Strongly Disagree: You strongly disagree with the statement and feel *strongly negative* about the statement.

Section B

22. The following will ATTRACT me to work as an advanced life support practitioner in South Africa (Please indicate your choice with a tick (√) in the appropriate block provided)

Code	Statement	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
1	A market related salary					
2	A safe workplace					
3	A hygienic workplace					
4	Evidence of effective immediate supervision					
5	Evidence of technological advancements in medical equipment and vehicle design.					
6	Evidence teamwork and equal distribution of workload					
7	Evidence of effective organisational communication channels					
8	A job with higher professional rank and better promotion opportunities					
9	Awarding of allowances					
10	Being part of the organisational decision making processes					
11	Sustainable employment					
12	Support for career development					
13	Coaching and mentoring support					
14	Access to and support for training and education					
15	Various leave packages					
16	Recreational facilities					
17	Equal opportunity					
18	Protection of pregnant women against discrimination					

Section C

23. The following will encourage me to REMAIN IN / RETURN TO South Africa to work as an advanced life support practitioner (*Please indicate your choice with a tick (✓) in the appropriate block provided*)

Code	Statement	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
1	I am paid a market related salary					
2	I have a safe workplace					
3	The health condition at my rest station is similar to the health conditions at my home					
4	I have a good working relationship with my supervisor					
5	I have the appropriate functional equipment to conduct my work					
6	I am part of the organisational decision making process					
7	I have sustainable employment					
8	The work that I do is stimulating					
9	I have access to and support for training					
10	I have career advancement opportunities					
11	I am offered allowances					
12	The employer contribute to my pension fund					
13	The working hours does not impact on my personal life.					
14	The South African crime rate drop					

Section D

24. The following will MOTIVATE me to work as an advanced life support practitioner in South Africa (Please indicate your choice with a *tick* (✓) in the appropriate block provided)

Code	Statement	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
1	A market related salary					
2	A safe workplace					
3	A hygienic workplace					
4	Effective immediate supervision					
5	Availability of functional organisational medical equipment					
6	Teamwork and equal distribution of work					
7	Effective organisational channels of communication					
8	Being part of the organisational decision making process					
9	Career advancement opportunities					
10	Annual bonuses					
11	Allowances					
12	Paid leave packages					
13	Sustainable employment					
14	Coaching and mentoring programmes for employees					
15	Access to in-service training					
16	Access to educational programmes					
17	Available recreational facilities					
18	Flexible working hours					
19	Equal opportunity policies					
20	Protection of women against discrimination					

Thank you for completing this survey questionnaire. Please return the completed questionnaire in the enclosed freepost envelopes. Questionnaires may also be faxed to +27865323454 or emailed to ajethg@gmail.com

You are encouraged to complete the survey questionnaire online at <https://docs.google.com/spreadsheet/viewform?formkey=dG9tTG5OaG5DYjdRWXJKLXpVZmdjN0E6MQ>

Appendix C: EMS Manager questionnaire

Topic: An investigation into recruitment, retention and motivation of advanced life support practitioners in South Africa.

Dear Participant,

Thank you for taking the time to complete this survey questionnaire which will take approximately 10 minutes. Your input is greatly appreciated. Only complete this survey if you are a manager of an Emergency Medical Service in South Africa employing advanced life support practitioners. These qualifications may include Critical Care Assistants, National Diploma in Emergency Medical Care (or equivalent) and Bachelor of Technology in Emergency Medical Care (or equivalent).

Emergency Medical Services worldwide are dependent on the right number of motivated and skilled advanced life support (ALS) practitioners to care for critical patients. However, these organisations are struggling to effectively recruit, retain and motivate ALS practitioners over an extended period. The increasing demand for ALS practitioners and the decrease in supply has created voids in certain parts of the country. This study therefore aims to identify factors which influence and ALS practitioner recruitment, retention and motivation. Results from this research will be used for research purposes only. I would like to assure you that the information you provide will be kept strictly confidential.

If you have any queries or would like further information about the research, please feel free to contact the researcher via the following methods;

Telephone: +27 31-3735267

Fax: +27 86-5323454

Email: ajethg@gmail.com

The promoters can be contacted via email

Dr R Bhagwan: bhagwanr@dut.ac.za

Professor Lee Wallis: leewallis@bvr.co.za

The Research Ethics Committee of the Faculty of Health Sciences at the University of Cape Town can be contacted as below;

Room E52-24 Groote Schuur Hospital, Old Main Building, Observatory, 7925

Telephone: +2721 4066626

Fax: +2721 4066411

Email: shuretta.thomas@uct.ac.za

Once you have read this information letter in its entirety, understand its contents, signed the consent letter below and agree to voluntarily participate in the survey, then kindly proceed to the survey below.

Statement of agreement to participate in the research

I (Mr, Miss, Mrs, Ms, Dr, Prof)_____ (full name of the subject - in block letters) have read this document in its entirety and understand its contents. Where I have had any queries or questions, these have been explained to me by _____ (full name in block letters) to my satisfaction. Furthermore I fully understand that I may withdraw from this study at any stage without any adverse consequences. I, therefore voluntarily agree to participate in this study.

Participant's name: _____ Participant's signature: _____ Date: _____

Witness name: _____ Witness signature: _____ Date: _____

Researcher's name: _____ Researchers signature: _____ Date: _____

Supervisor's name: _____ Supervisors signature: _____ Date: _____

When you have completed the questionnaire, please return, in the self-addressed envelope, enclosed. The cost of the postage will be paid by the researcher. Completed questionnaires may also be faxed to +27 865323454 or emailed to ajethg@gmail.com. The survey questionnaire must only be completed once, either online or in hard copy. When completing the questionnaire online, please utilize your organisations name.

You are encouraged to complete the survey questionnaire online at <https://docs.google.com/spreadsheet/viewform?formkey=dERHMIRLRGVoalFVam9ld0o0QkJrYIE6MQ>

Please answer the questions in the survey as completely and honestly as possible. I hope you find completing the survey enjoyable, and thank you for taking time to assist me.

Signed by candidate

Padarath Gangaram

Emergency Medical Service Name _____

An investigation into recruitment, retention and motivation of advance life support practitioners in South Africa.

Section A: Demographical Data

Instructions to participant: For the following questions, please indicate your choice with a *tick* (✓) in the appropriate block provided.

1. Please specify your South African race group. *(For statistical purposes only) (Tick (✓) 1 option only)*

Code	South African race group	Tick (✓)
1	Black	
2	White	
3	Coloured	
4	Indian	
5	Other	

Specify other: _____

2. Please indicate your age in years.

3. Please specify your gender. *(Tick (✓) 1 option only)*

Code	Gender	Tick (✓)
1	Male	
2	Female	

4. Please specify your highest level of educational (*Tick (√) 1 option only*)

Code	Highest level of educational	Tick (√)
1	Primary School	
2	Secondary School	
3	Matric / Grade 12	
4	Tertiary	

5. Please specify your highest Emergency Medical Care qualification obtained. (*Tick (√) 1 option only*)

Code	Highest Medical / Emergency Medical Care qualification	Tick (√)
1	Basic Ambulance Assistance	
2	Ambulance and Emergency Assistant	
3	Critical Care Assistant	
4	Operational Emergency Care Orderly	
5	Emergency Care Technician	
6	National Diploma in Emergency Medical Care or equivalent	
7	Bachelor of Technology in Emergency Medical Care or equivalent	
8	Master of Technology in Emergency Medical Care or equivalent	
9	Medical Doctor / Doctor of Philosophy or equivalent	
10	Other	

Specify Masters and Doctorate and other qualifications: _____

6. Please specify your highest independent Medical Rescue qualification obtained. *(Tick (√) 1 option only)*

Code	Medical Rescue qualification	Tick (√)
1	Basic Medical Rescue or equivalent	
2	Intermediate Medical Rescue or equivalent	
3	Advanced Medical Rescue or equivalent	
4	Other	

Specify other: _____

7. Please specify the field/s of any other qualification obtained. *(Tick (√) Any number of options may be possible).*

Code	Any other formal qualification	Tick (√)
1	General Management	
2	Human Resources Management	
3	Public Health Management	
4	General Law	
5	Disaster Management	
6	Project Management	
7	Education	
8	Occupational Health and Safety	
9	Call Centre Management	
10	Other	

Specify other: _____

8. Geographical operational area/s of your Emergency Medical Services. (Any number of options may be possible).

Code	Geographical operational areas	Tick (√)
1	Gauteng	
2	KwaZulu-Natal	
3	Western Cape	
4	Northern Cape	
5	Eastern Cape	
6	Free State	
7	North West	
8	Limpopo	
9	Mpumalanga	
10	Provider of national Emergency Medical Services	
11	Provider of international Emergency Medical Services	
12	Other	

9. Please specify which of the following is performed by advanced life support practitioners in your Emergency Medical Services (Any number of options may be possible).

Code	Services	Tick (√)
1	Operational duties	
2	Standby duties at special events	
3	Aeromedical duties	
4	Education and training	
5	Management	
6	Medical Rescue duties	
7	Public relations / Media liaison	
8	Communication Centre duties	
9	Disaster management	
10	Other	

Specify other: _____

10. Please specify the total number of advanced life support practitioners employed in your Emergency Medical Service (*Tick (✓) 1 option only*)

11. Please specify the average annual turnover rate of advanced life support practitioners in your organisation. (*Tick (✓) 1 option only*)

Code	Turnover rate	Tick (✓)
1	< 10 %	
2	10 % to 20 %	
3	21 % to 30 %	
4	31 % to 40 %	
5	41 % to 50 %	
6	> 50 %	

12. Please specify the average annual vacancy rate of advanced life support practitioners in your organisation. (*Tick (✓) 1 option only*)

Code	Vacancy rate	Tick (✓)
1	< 10 %	
2	10 % to 20 %	
3	21 % to 30 %	
4	31 % to 40 %	
5	41 % to 50 %	
6	> 50 %	

13. Please specify the reason/s for the advanced life support practitioner vacancy rates in your organisation. (*Any number of options may be possible*).

Code	Reasons for vacancy	Tick (✓)
1	Budgetary constraints	
2	Lack of available advanced life support practitioners	
3	Unable to attract available advanced life support practitioners	
4	Unable to retain exiting advanced life support practitioners	
5	Poor organisational motivational strategies for advanced life support practitioners.	
6	Other	

Specify other _____

Five-point Likert scale

Instructions for completing the remaining sections

Please read each statement carefully, decide to what degree you agree or disagree with each statement and mark your answer on the Likert scale. Please answer all the statements and choose **only one** answer per statement.

Guide for interpreting responses

Strongly Agree: You strongly agree with the statement and feel *very positive* about the statement.

Agree: The statement is acceptable to you. You feel *positive* about the statement.

Neutral: *Unable* to decide if you agree or disagree with the statement.

Disagree: The statement is not acceptable to you – you feel *negative* about the statement.

Strongly Disagree: You strongly disagree with the statement and feel *strongly negative* about the statement.

Section B

Instructions to respondent: For the following questions, please indicate your choice with a tick (✓) in the appropriate block provided.

14. The following will ATTRACT advanced life support practitioners to work in South African (Please indicate your choice with a tick (✓) in the appropriate block provided)

Code	Statement	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
1	A market related salary					
2	A safe workplace					
3	A hygienic workplace					
4	Effective immediate supervision					
5	Technological advancements in medical equipment and vehicle design.					
6	Teamwork and equal distribution of workload.					
7	Effective organisational communication channels					
8	Pension packages					
9	Promotional opportunities.					
10	Allowances					
11	Participation in organisational decision making processes					
12	Sustainable employment					
13	Recognition of work well done					
14	Support for career development					
15	Coaching and mentoring programmes					
16	Paid leave packages					
17	Access to / support for training and education					
18	Recreational facilities					
19	Equal opportunity policies					
20	Protection of women against discrimination					

Section C

15. The following will RETAIN or encourage advanced life support practitioners to RETURN to South Africa (*Please indicate your choice with a tick (✓) in the appropriate block provided*)

Code	Statement	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
1	A market related salary					
2	A safe workplace					
3	A hygienic workplace					
4	Effective immediate supervision					
5	Technological advancements in medical equipment and vehicle design.					
6	Teamwork and equal distribution of workload.					
7	Effective organisational communication channels.					
8	Promotional opportunities.					
9	Pension packages					
10	Allowance packages					
11	Being part of the organisational decision making process					
12	Sustainable employment					
13	Recognition of work well done					
14	Support for career development					
15	Coaching and mentoring programmes					
16	Access to / support for training and education					
17	Paid leave packages					
18	Recreational facilities					
19	Equal opportunity policies					
20	Enforced protection of women against discrimination					

Section D

16. The following will MOTIVATE advanced life support practitioners to work in South Africa (Please indicate your choice with a *tick* (✓) in the appropriate block provided)

Code	Statement	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
1	Offer market related salary					
2	Create a safe workplace					
3	Create a hygienic workplace					
4	Improve the skills of immediate supervisors					
5	Provide technologically advanced medical equipment to advanced life support practitioners					
6	Encourage teamwork and equal distribution of workload.					
7	Enforce effective organisational communication channels					
8	Provide pension packages					
9	Create opportunities for career development and advancement.					
10	Offer allowance packages					
11	Encourage advanced life support participation in organisational decision making processes					
12	Offer paid leave packages					
13	Recognition of work well done					
14	Provide sustainable employment					
15	Provide coaching and mentoring programmes					
16	Access to / support for training and education					
17	Provide recreational facilities					
18	Allow for flexible working hours					
19	Enforce equal opportunity policies					
20	Enforce protection of women against discrimination					

Thank you for completing this questionnaire survey. Please return the completed questionnaire in the enclosed self-addressed envelope. Questionnaires may also be faxed to +27865323454 or emailed to ajethg@gmail.com

You are encouraged to complete the survey questionnaire online at <https://docs.google.com/spreadsheet/viewform?formkey=dERHMIRLRGVoalFVam9ld0o0QkJrYIE6MQ>

Appendix D: Focus group guide

Topic: An investigation into recruitment, retention and motivation of advanced life support practitioners in South Africa

Date: _____

Time: 09h00

Venue: _____

Facilitator: P Gangaram

Number of participants: _____

Total participant time required: 2h30 + 05 minutes + 15 minutes + 05 minutes.

3 hours

Breaks: 15 minutes

1. Introduction (10 minutes)

- 1.1 Good morning, I am Padarath Gangaram. I will be facilitating the discussion.
- 1.2 Thank you for agreeing to help me with my research study. I appreciate your willingness to share your time and expertise. You are the experts in this field and the information you provide will help improve EMS related service delivery in the country.
- 1.3 You were all chosen for very strategic reasons to be part of this focus group session. We have....present and ...joining us via skype. Now that you have had time to get to know each other, the research will continue shortly. Please do not mention any brand names of organisations.

2. Purpose of the focus group session

- 2.1 The purpose of this focus group session is to generate data relating to factors which influence advanced life support practitioner **recruitment, retention and motivation.**

3. Ground Rules for the focus group session

- 3.1 Please remember that English is the official language of communication for this session.
- 3.2 Please note that I want you to do the talking.
- 3.3 I would like everyone to participate in the discussion. Please speak up whether you agree or disagree.
- 3.4 I may call on you if I haven't heard from you in a while.
- 3.5 Please do not have side discussions as I would like to hear all your input.
- 3.6 Please be honest, respectful and non-judgemental towards other members.
- 3.7 Please be prepared to be interrupted by the facilitator to get the discussion back on track.
- 3.8 Please note that there is no right or wrong answers. Every person's experiences and opinions are important.
- 3.9 I want to hear a wide range of opinions. You don't have to agree with people's opinions. Feel free to agree or disagree with others say and give your own opinion: the greater the variety of opinions, the greater will be the data gathered.
- 3.10 Please note that for research purposes, I want to capture everything you have to say, so this session will be recorded. You will not be identifiable by the recordings.
- 3.11 Please do not refer to any of the participants by their names, but by their designated research numbers. This is to make sure that the information you provide remains anonymous.
- 3.12 I want everyone to feel comfortable when sharing sensitive issues as whatever is said here will remain here and will only be utilized for research purposes.
- 3.13 If you have to go to the bathroom, please do so in a quiet manner and return as soon as possible.
- 3.14 There are two research assistants joining the focus group. They have signed a confidentiality note.

4. Discussion guide (02h30)

- 4.1 The discussion session of the focus group will be open for approximately 02h30. The findings of phase one of this research will be presented for discussions, as and when the need arises.
- 4.2 There will be three major discussion points, including factors which influence ALS recruitment, retention and motivation.

- 4.3 There will be 2 time warnings, one at 20 minutes before the end of the discussion and the second at 5 minute warning before the end of the discussion.
- 4.4 Prior to concluding this data collection session, you will be given the opportunity to comment on general points you may want to raise.
- 4.5 Are there any questions prior to commencing?
- 4.6 Discussions will now commence on factors which influence ALS recruitment.....

5. Closing (5 minutes)

- 5.1 Thank you once again for your valuable contributions, it has been greatly appreciated. Thank you for your time and patience. I will certainly keep you informed of the findings of the research.
- 5.2 If you have any questions about the focus group session or the project, please feel free to contact the researcher, the promoters or the UCT Ethics committee on the details as presented.
- 5.3 Thank you once again and have a safe journey!