An Evaluation of The Impact of Human and Material Resource Shortages on Student Nurses’ Training Programmes in Zimbabwe;

A Case of The Registered General Nurse Training Programme:

(January 2009-December 2012)

By

JULIET MUFUKA

A dissertation submitted in partial fulfillment of the requirements for the Master in Business Administration degree

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Faculty of Commerce

University of Zimbabwe

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Supervisor: Mr. G. Magaramombe
I dedicate this dissertation to my children, Ruvimbo & Tinashe, to my parents and to my supervisor Mr. Magaramombe for believing in me and supporting me through out.
DECLARATION

I Juliet Mufuka, do hereby declare that this dissertation is the result of my own investigation and research, except to the extent indicated in the Acknowledgements, References and Acknowledged sources in the body of the report, and that it has not been submitted in part or in full for any other degree to any other university.

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Student Signature Date

Name of Supervisor: Mr. G. Magaramombe

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Supervisor Signature Date
ACKNOWLEDGEMENTS

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ABSTRACT

This research was an evaluation of the impact of human and material resource shortages on the nurses training programmes in Zimbabwe within the period January 2009 to December 2012. The study was based on a case study of the three year diploma in general nursing which is the major and basic training programme in the Zimbabwe nursing profession. It was carried out at the country’s two central hospitals and at one provincial hospital. The role of human and material resources in any training programme, let alone nurses’ training, cannot be underestimated in an environment where globalization has made society more knowledgeable and expect high quality care when citizens seek health care services. The study adopted both the qualitative and quantitative approaches. Primary data was collected using questionnaire and interview guides and secondary data on pass rates was collected using interview guides. A sample size of 60 student nurses who were still undergoing training, 30 newly qualified nurses, 3 Principal Nursing Officers, 3 Principal Tutors and 1 Director was used to generalize the findings of the study to all nurses trained in Zimbabwe’s public health institutions.

The study findings indicated that shortage of human and material resources had a negative impact in that student nurses do not get adequate supervision on some procedures which they are not yet competent to perform on their own. The results also showed that there are nurses who continue to get to the next level of training or even qualify without receiving comprehensive training in some conditions or using certain machinery or equipment, for example all students in the study said they never received computer training during training. The study recommended that the MoHCW needs to have flexible policies that allow training institutions to make their own strategic planning to suit their capacities. There is need for improved staffing levels so that the student mentor ratios improve. The need for specialist doctors has been shown by the evidence of the high numbers of students who qualified without having nursed quite a number of conditions because there were no specialist doctors to perform the major operations. The study recommends further research in the area of effectiveness of the nursing training strategies in Zimbabwe.
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LIST OF ABBREVIATIONS AND ACRONYMS

AIDS             Acquired Immune Deficiency Syndrome
CDC   Centre for Disease Control
CEO   Chief Executive Director
ECG   Electro Cardio Gram
EHP   Emergency Hiring Plan
GNU   Government of National Unity
GoZ   Government of Zimbabwe
HIV   Human Immunodeficiency Virus
HR / HRH Human Resource / Human Resources for Health
ICT   Information Communication & Technology
MoHCW Ministry of Health & Child Welfare
MDGs- Millennium Development Goals
NEPAD New Partnership for African Development
NGO   Non Governmental Organisation
OECD  Organization for Economic Cooperation and Development
PESTEL Political Economic, Social, Technological, Environmental & Legal
RGN   Registered General Nurse
SWOT  Strengths Weaknesses Opportunities Threats
STERP Short Term Recovery Plan
SARA  Support for Analysis and Research in Africa
USAID United States Agency for International Development
USD   United States Dollar
WHO   World Health Organisation
KEY WORDS

Abdominal Hysterectomy - Major operation done on the abdomen to remove the womb

Appendicectomy - Major operation done on the abdomen to remove the appendix

Barrier Nursing - Type of nursing care where a person is isolated from the rest of the patients

Brain Drain - The large scale emigration of a large group of individuals with technical skills or knowledge

Cardio-pulmonary

Resuscitation - An emergency medical procedure for restoring normal heart beat and breathing to a person after they have stopped breathing and / or their heart has stopped beating.

Client - A person that is not sick who seeks the advice or service of a professional medical person.

Community Nursing - The branch of nursing, that deals with people, communities, and populations who are at risk of disease(s) in order to maintain and improve their health. It focuses on individuals and families in their natural settings within communities

Defibrillator - An electrical device that is used in hospitals to temporarily stop the Irregular heart beating of the heart and restore normal heart beat by a brief electrical shock to the heart muscle.
Diagnosis - The process of identifying or establishing the nature and cause of a disease or injury on a person or animal.

Health workforce - Is the aggregated health personnel from various disciplines in the health sector that includes nurses, midwives, doctors dentists, radiographers, laboratory scientists/technicians, environmental health personnel, health management personnel, and auxiliary staff.

Infectious Disease - A disease that is spread or transmitted to human beings through a specific means of contact.

Intensive Care Nursing - The branch of nursing that deals with critically ill or unstable patients who require specialized high care.

Lumbar Puncture - Is a diagnostic or therapeutic procedure done by doctors where a thick needle is inserted into the spinal cord to collect spinal for diagnostic or therapeutic purposes.

Misdiagnosis - Incorrect diagnosis (see Diagnosis above)

Newly Qualified Nurse - For the purpose of this research; nurses who qualified between the years 2009 to 2012

Nurse Educators/Trainers – Specially trained and qualified nurses responsible for teaching student nurses.

Patient Care - The services given to people when they are sick or ill by health personnel in the treatment, management, and or prevention of illness or diseases.

Patient Safety - Is the act of ensuring that no harm associated with health care is done to patients by preventing errors to patients.
Patient - A person who is ill or injured and receiving medical treatment from health workers either from home or institutionalised.

Phototherapy - Is the treatment of jaundice in the newly born babies where purple fluorescent light is administered to their naked skin to eradicate the yellow discolouration of the skin.

Registered General Nurse - Is a qualified nurse who has undergone a three year training course in all aspects of nursing and is registered with the regulatory body or council to practice in that country.

Skeletal Traction - Is the mechanical application a force/mass to pull bones or muscles in the treatment of bone fractures or muscle disorders.

Skills Drain - The movement of skilled labour, (i.e. technical or intellectual) to other countries or sectors usually in search of better economic environments.

Student Nurse - A person studying in order to enter the nursing profession and will lead to certification in a diploma in general nursing.

Thomas Splint - Is a rigid frame of bars that is used in emergencies to immobilise fractured bones of the thigh (femurs). It extends from the hip to beyond the foot.

Tracheostomy - Is an incision into the trachea performed when a person cannot breath through the mouth or nose and it provides passage of air into the lungs.
Under water Seal Drain - Is a specialized piece of tube inserted into the chest cavity between the ribs in order to drain fluids that have accumulated in the pleural cavity.

Ventilator - An electric appliance used for artificial respiration in very critically ill patients who cannot breathe on their own.

X-Ray View Mirror - Is an electric box with high light intensity used for viewing x-rays

Zimmer Frame - Is a metal structure with rubber castors or wheels used for supporting or aid walking to the handicapped or very old people.
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CHAPTER ONE

INTRODUCTION

1.0 INTRODUCTION

This chapter gives a brief background on the various nurses’ training programmes in Zimbabwe with more emphasis put on the Registered General Nurse (RGN) training programme which the researcher is more interested in. It provides the background to the human and material resource shortages affecting the health sector and consequently the nurses’ training programmes. The other areas covered in this chapter include, the business model, SWOT and PESTEL analysis, statement of the research problem, research objectives and questions, justification of the study, the study’s proposition, the scope and structure of the study.

The study sought to evaluate the impact of the human and material resource shortages on the RGN training programme in Zimbabwe over the period of January 2009 to December 2012.

1.1 Background of the Study

According to Human Resource for Health (HRH), August 2012, adequate human and material resources are arguably the most critical components of an effective and efficient health delivery system. An appropriately trained, skilled and well motivated workforce is a critical component required for the efficient delivery of health services and for the maintenance of high standards of care and professionalism in the delivery of health care services.

In his research article, Chetsanga, (2001) noted that in the past Zimbabwe has had a track record of producing high quality health professionals who are on demand
regionally and internationally, and with this in mind the question of interest to the researcher was; Is this still the case now with the nurse who is trained in this environment of severe shortages of human and material resources faced by the training institutions in the country? In a report by Migration for Development in Africa (MIDA), (2001) it was noted that Zimbabwe’s health delivery system has over the past 2 decades, since 1990, been hampered by a massive internal and external brain and skills drain. This has resulted in the loss of experienced qualified health professionals from the public health sector who are critical in the training of nurses and other health professionals. The remaining health professionals are now spread out thinly, to the extent that some institutions are now staffed by untrained cadres. According to Ms Russell, the Principal Nursing Officer at Parirenyatwa Central Hospital, during training student nurses are expected to go on attachment to some of these institutions where they are supervised by untrained personnel. (February, 15, 2013; Interview)

The Zimbabwe Ministry of Health’s Task Force report, (2009) observed that the health sector is characterized by overall failure by the public sector to perform its intended functions such as to retain locally well trained health care professionals, inability to recapitalize or re-equip the obsolete machinery and technology in the public health institutions. The Ministry of Health and Child Welfare has failed to maintain adequate stocks of drugs, medical equipment, and have also failed to review the nurses curricular to keep abreast with current trends in disease patterns and the dynamics in the health sector.

The Health Task Force Report, (2009) also noted that, the main challenge of continuing to follow the health training policy is the lack of both lecturers and tutors across all fields, with the vacancy rate for tutors in the health sector at a high level of 68%. This cadre is critical in the training of nurses and midwives.

The Health Task Force report, (2009) reported that the shortages of material resources had reached alarming levels in all public health institutions. When nurses are trained anywhere in the world they are expected to be internationally recognised and therefore should be able to work anywhere in the world. As highlighted by the matron responsible for students’ training at Parirenyatwa Hospital, Ms. Russell, (15 February,
2013 face to face interview) during their practical attachments students are expected to have hands on training using ideal resources. So the researcher sought to evaluate how these trainee nurses acquire their practical skills in the absence of these ideal resources, both material and human.

According to Chikanda, (2009) the hyper-inflationary period during 2008 attributed to the massive exodus of the health workforce from the public health institutions for “greener pastures” regionally and internationally. The most affected sectors were; health, education, engineering, surveying, veterinary medicine, and forensic science.

Chikanda, (2009) reported that in a study conducted in Zimbabwe during the year 2005, it was noted that the levels of health workforce migration to developing countries rose significantly high that the impact in the public health sector reached unsustainable levels. The report noted that the health sector was the hardest hit as both skilled and semi-skilled workers left the country in search of better living conditions.

According to a report by WHO, (2010) the overall vacancy rate in the public health sector was reported to be at 42%, while that for doctors, medical equipment engineers, environmental health officers, health care programmers, and nurses stood at 60%, 48%, 79%, 79%, and 58% respectively. These high vacancy rates led to overburdening of the remaining personnel, thus the researcher found it of interest to assess how all these factors have impacted on the nurses’ training in Zimbabwe.

Through its Short Term Recovery Plan (STERP), March, (2009) the Government of Zimbabwe (GoZ), acknowledged the many problems that affected the health sector as a whole. Experienced health workers migrated leaving a void that impacted negatively on public health institutions mainly. Due to the effects of hyperinflation, infrastructure deteriorated to alarming levels, hospitals registered shortages of drugs, equipment and personnel. All these problems resulted in deterioration in the quality of service provision in public health institutions.

Mapanga (2010) noted that Zimbabwean society was becoming more and more educated and highly enlightened about the quality of nursing care they deserved. In this same article Mapanga, (2010) points out that it is the high level of application of knowledge and skills that results in excellent competencies in assisting individuals, sick
or well, in activities contributing to health, its recovery or peaceful death. Both the nursing profession and individual nurses recognize excellence in nursing when the society they serve is satisfied with the standard of nursing care they receive. Society, patients in particular, expect high standards of nursing care when they seek health care services in health institutions.

It is with this background that the researcher sought to evaluate the impact of human and material resource shortages on the training of student nurses in Zimbabwe’s public health institutions.

1.2 Background Of The Nurses Training Programmes

According to the Ministry of Health and Child Welfare report, (2010) Zimbabwe has several training programmes for nurses. It is the Ministry of Health and Child Welfare that is responsible for running most of these nurses training programmes at Government and Mission hospitals. There is training for those who have just completed secondary or university education and training for those that have qualified as general nurses and want to further their qualifications. The programmes are offered by the Ministry of Health and Child Welfare at central and provincial hospitals, missions and private hospitals and also by the Ministry of Higher and Tertiary education at universities.

Table 1.1 summarises all the different nurses’ training programmes in Zimbabwe and where they are offered.
Table 1.1: Nurses’ Training Programmes in Zimbabwe

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<td>Masters in Nursing Science Degrees</td>
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<tr>
<td>Bachelor’s Degree in Nursing Science (soon after ‘A’ Level)</td>
<td>4 years</td>
<td>Universities</td>
</tr>
<tr>
<td>Bachelor’s Degree in Nursing Science (After RGN Diploma)</td>
<td>3 years</td>
<td>Universities</td>
</tr>
<tr>
<td>Post Basic Diplomas (Specialties in different areas)</td>
<td>1 Year</td>
<td>Central, Provincial, Mission &amp; Private Hospitals</td>
</tr>
<tr>
<td>Registered General Nurse Diploma (RGN)</td>
<td>3 Years</td>
<td>Central, Provincial &amp; Mission Hospitals</td>
</tr>
<tr>
<td>Primary Care Nurse Certificate (PCN)</td>
<td>18 Months</td>
<td>District &amp; Mission Hospitals</td>
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For this study, the researcher chose only to look at the three year RGN Diploma programme which is the basic training that is offered by the Ministry of Health and Child Welfare and is also an internationally recognised nurses’ training programme.

1.3 Ministry of Health and Child Welfare (MoHCW) Vision Statement

According to MoHCW, (2010) the vision for the ministry of Health and Child Welfare states that;
The Government of Zimbabwe desires to have the highest possible level of health and quality of life for all its citizens, attained through the combined efforts of individuals, communities, organizations and the government, which will allow them to participate fully in the socio-economic development of the country. This vision will be attained through guaranteeing every Zimbabwean access to comprehensive and effective health service (MoHCW, 2010).

1.4 Zimbabwe Ministry of Health and Child Welfare (MoHCW) Mission Statement

The mission statement states that: (MoHCW, 2010)

The MoHCW wishes to provide, administer, coordinate, promote and advocate for the provision of quality health services and care to Zimbabweans while maximising the use of available resources.

In pursuing this, the Ministry of Health and Child Welfare is committed to the following values: -

- Equity in health status and health care
- Comprehensive quality services
- Cost effectiveness (Value for money) and efficiency
- Client and provider satisfaction
- Transparency and accountability
- Ownership and partnership in health

The Ministry of Health and Child Welfare further commits itself to monitoring and evaluating the performance of the health service to ensure accountability and adherence to national standards and policies.
The mission of the Ministry of Health and Child Welfare will be pursued through:

- Continuously reforming the Health Sector in line with changing needs.
- Strengthening the Primary Health Care Approach as the main strategy for health development.
- Increasing partnership in health services and care whilst maintaining the principle of three ones (one national plan, one coordinating mechanism and one monitoring and evaluation mechanism.
- Ensuring resource availability and sustainability (MoHCW, 2010).

1.5 Zimbabwe Ministry of Health and Child Welfare Goal

The goal of the ministry is to ensure that Zimbabweans enjoy the highest possible level of health and quality of life.

The aims of the MoHCW can be summarized as:

i. To keep as many people as possible in good health in the Community.

ii. To provide appropriate quality services for those needing care in the community and,

iii. To provide high quality hospital services at the appropriate level for those few requiring that form of treatment and care

1.6 The Business Model

A business model relates to an organization’s ability to deliver profits (Mutowo, 2011). Profit is not only measured in monetary terms, in the context of nurses’ training, it is the production of highly competent and efficient nurses who uplift or maintain high
Another definition by Thompson, Strickland and Johnson (2007) says that a business model is the method by which an organization generates revenue to sustain itself. Thompson et al, (2007) further explained that an organization’s business model explains the rationale for why its business approach and strategy will be a success. For the nurses’ training, if the training fails to produce competent and efficient nurses then the strategy is said not to be viable and survival of the business is in doubt.

A business model expresses the business logic of a specific organisation. For the nurses training programmes, the researcher wondered what logic was behind continued training of nurses at so many institutions which are ill-equipped and understaffed as opposed to pooling of resources in just a few centres thereby ensuring high quality training given to nurse trainees, especially with the background that thousands of nurses have not been employed after completing their training (The Herald, August 12 2012).

The researcher evaluated the nurses’ training programmes’ business model to establish whether the current environment of shortages of human and material resources had any impact on the organization’s success story.According to Mutowo, (2011) a business model has five (5) key components which are vital in the implementation of its business and these include;

(i) Infrastructure

This is used to execute a company’s business thrust. In the nurses training programmes one is looking at such things as the facilities, and Information & Communication Technology (ICT), which denotes effective material resources.
(ii) Offering

This is the value proposition offered by the business, that is, the products and services offered by the business. In this case the qualified nurses produced after finishing training and how efficient and competent they are.

(iii) Customers

These are the target people to which the business is selling its products. In this study the customers relate to the health institutions that take up the qualified nurses and the society at large that is served by these nurses.

According to Mutowo, (2011) customer relationships are very important. An organization strives to gain customer loyalty and intimacy. When people get sick, they usually want to be served at reputable hospitals. This reputation is derived from the quality of care and expertise offered by its personnel. As the society is continually getting enlightened and knowledgeable about health issues, it is of paramount importance that the nurses of today live up to its expectations.

(iv) Value Chain

This relates to how the business processes bring in raw materials, convert, and distribute these goods efficiently so that it produces quality end products. In this study, the quality end product is the qualified nurse who enters into training as the raw material and is converted into a highly qualified, efficient and competent nurse at the end of the three years of training. It has been noted earlier on in this document that the Health Task Force report, (2009) established that the health sector is characterised by inability to recapitalize or re-equip the entire health sector. With this point in mind the researcher tried to establish how these nurses pass through all the different stages of training in an ill-equipped environment in terms of human and material resources to be converted and distributed to work in hospitals as quality end products.
(v) Finances

Finance is crucial in any business operations. An organization should establish how its revenue is generated. In the case of government run training programmes, the training institutions receive funding from the Ministry of Finance through budget allocated to the Ministry of Health and Child Welfare. Policy or decision makers come up with supporting documents when applying for funding in order to justify reasons for wanting more funds for their training institutions so as to sustain these programmes. For the privately run programmes under the missions and private hospitals, the management team should come up with sufficient budget allocations for the training programmes.

1.7 SWOT Analysis

According to Thompson et al, (2007) SWOT analysis is a simple yet powerful tool for predicting an organization’s capabilities and deficiencies, its market opportunities and the external threats to its future well being.

Humphrey, (2005) describes a SWOT analysis as a tool that guides an organization to identify the positives and negatives inside their organization (Strengths &Weaknesses) and outside of it, in the external environment (Opportunities &Threats). He suggests that developing a full awareness of an organisation’s situation can help with both strategic planning and decision-making.

SWOT Analysis for the Training Programmes are as follows;

1.7.1 Strengths

(i) Sufficient space to expand existing structures in the three hospitals
(ii) Existing support from the donor community and the government
(iii) Numerous training programmes for nurse educators
(iv) Potential for attracting back experienced personnel from competitor countries
1.7.2 Weaknesses

(i) Severe shortages of human and material resources
(ii) Obsolete equipment and old technology
(iii) Lot of bureaucracy within the ministry of health
(iv) Inappropriate organizational structure
(v) Low staff motivation
(vi) Policy makers with rigid policies which are not environmentally sensitive
(vii) Low staff retention and lack of incentives
(viii) Deteriorating infrastructure

1.7.3 Opportunities

(i) Plans by private and municipal authorities to undertake general nurse training programmes
(ii) Support from the donor community and the government
(iii) Advances in technology can assist in improving teaching methods
(iv) Planned improvements in educators’ remunerations
(v) Agreements with other regional countries to ban employment of nurses from neighbouring countries

1.7.4 Threats

(i) Brain and skills drain to international countries
(ii) Decline in donor support
(iii) Unfavourable economic climate
(iv) Freezing of all vacant posts by the Minister of Finance
(v) Lack of adequate financial support from treasury, (i.e. insufficient budget allocation to the ministry of health).
1.8 Industry Analysis

1.8.1 PESTEL Analysis

Robinns and Coulter, (2001) said that organizations do not operate in a vacuum; they function in an open system known as the environment. They also said that the environment surrounds institutions and consequently affect their operations. Similarly, nurse training programmes are influenced by environmental factors, which are, political, economic, socio-cultural, technological, environmental (physical) and legal. These factors can influence business operations directly or indirectly.

1.8.1.1 Political and Legal Factors

The political environment for Zimbabwe is characterised by uncertainty and instability. After the formation of the inclusive government in February 2009 there was hope of economic recovery and growth as this gave indications for peace and stability. This has not been the case as the economy has not performed well (The Herald, 13 August 2010). Foreign Direct Investment (FDI) is a way of bringing money into a country but foreign investors have been reluctant to come into Zimbabwe as the country is still regarded as a high risk nation politically. The Indigenisation and Empowerment Act, which was passed as a bill in the Zimbabwean Parliament in March 2008 has been another political factor which has deterred foreign investors from investing in Zimbabwe (Hawkins, 2011).

As the Government of Unity (GNU) nears its expiry, as well as the impending referendum and general elections around the corner, the political situation is certainly unpredictable. Previous experience has shown that general elections are marred with violence. This poses a serious threat to the already burdened human resource as there is a tendency for people to flee a country when there is violence.
The freezing of all vacant posts in government departments by the Minister of Finance, Tendai Biti, is another contributory factor to the shortage of human resources affecting training schools.

In a newspaper article in the Sunday Times of 17 December 2000, Dingilizwe Ntuli reported that Zimbabwe's ailing health sector had been hit by a massive exodus of doctors and nurses over the past four years. More than 4 000 doctors and nurses have left the country over the past 16 months. Health Minister then, Dr Timothy Stamps was quoted saying, “Zimbabwe had been losing an average of 20% of its health care professionals every year to other countries, each of the country's five major hospitals loses about 24 senior nurses and three doctors every month, leaving them in a desperate situation.”

1.8.1.2 Economic Factors

The extent to which government is willing to subsidise organisations is of paramount importance. Another important factor that influences the business operations of an organisation is the government’s priorities in terms of business support.

The economic decline in 2007 precipitated a growing exodus of health professionals from the country in search of better economic opportunities. The brain and skills drain has not only been to developed countries within and outside Africa but also to parallel programmes run by international and non-governmental organisations as well as the private sector (MoCHW, 2007).

The low salaries, lack of incentives, and weak retention policies and programmes within the Ministry of Health and Child Welfare have contributed to the brain drain.

Skill areas that have been affected in the health sector include, but are not limited to, doctors, nurses, nurse educators, pathologists, radiologists, dieticians, and environmental health officers. In an article by Chikanda, (2005), he reported that in a study undertaken in Zimbabwe in 2005, the magnitude and trend of brain drain had
reached unacceptable and unsustainable levels. The report goes on to say that the health sector has been the worst affected as both professionals and semi-skilled workers migrated in search of better employment opportunities.

1.8.1.3 Socio-cultural Factors

Globalization has made the world become a global village; as a result of this the society continues to be knowledgeable and enlightened. People expect high quality and advanced care when they seek health care services. (Mapanga, 2010) The question of interest to the researcher is; If the experienced and highly qualified workers are migrating to other countries how then does the trainee nurse acquire his/her skills during training that meet society’s expectations? (The Health Task Force Report, 2009))

Another socio-cultural factor that has impacted negatively on the health sector is the HIV/ADS pandemic. Health institutions have been over burdened by its toll on society. According to figures given by the matron at Parirenyatwa hospital, Ms. Russell, the ideal nurse patient ratio should be 1:5/6 but because of the burden resulting from the HIV/AIDS pandemic the ratio has increased to 1:15 or more. (15 February 2013 interview). According to Matron Russell, the staff establishments for health institutions were created before the pandemic and the toll continues to rise while the policy makers have not reviewed these staff establishment figures. Besides increasing the workload in hospitals, HV/AIDS also has spared the health workers themselves. It has caused numerous morbidities and mortalities resulting in loss of skills and expertise (Mutizwa-Mangiza, 2011).

Living conditions such as over crowding is a common feature in some parts of the urban and farming communities in Zimbabwe, as such diseases like Tuberculosis (TB) which are communicable diseases are still a health menace contributing to the workload on health care systems.
Besides being a result of economic push factors, brain and skills drain is also a result of socio-cultural factors, for example, once family members or friends managed to acquire citizenship in the foreign countries they are staying, they called others who will have remained behind to live as families abroad. This has led to massive migration by highly skilled and experienced health workers who are crucial in the training of nurses.

1.8.1.4 Technological Factors

Technology is a dramatic and dynamic force that changes people’s lives. New technology is constantly developing in the health sector, with new diagnostic machines, new operating theatre equipment, computers and audio-visual machines for the classroom setting. As noted earlier on, The Health Task Force Report, (2009) reported that public sector was failing to provide quality services to the public.

Chief executive Officers of hospitals in Harare were quoted in some media reports saying that the financial constraints which are a result of insufficient funds allocated to the Ministry of Health and Child Welfare in previous budget allocations have hindered the training institutions from acquiring new technology for aiding teaching programmes in the entire health system.

1.8.1.5 Environmental Factors

Karvee, (2011) describes the environment of a business as the external forces that influence the business decisions of an organisation. The environmental factors are identifiable elements which can be social, political, economic, or technical factors.

Karvee, (2011) further explains that these various environmental factors can impact on the operations of a business in an economy. These environmental factors can be categorized into two groups which are external and internal environmental factors of businesses. The internal environment of an organisation includes those factors that are within the organisation and are under its control. According to Karvee, (2011) examples of such environmental factors include; product quality, organizational culture,
leadership, and management styles. Organisational culture relates to the regulatory framework of the organisation and every member has to act within the limits of this framework.

Karvee, (2011) went on to say, in addition to internal factors are external factors, which are those factors that are found outside the organisation and are not under its control. These include but are not limited to, things such as the social environment, political conditions in the country, natural disasters and epidemics and Government regulations and policies.

Environmental scanning is a process of collecting, scrutinizing and providing information that is necessary for strategic planning. It helps in analyzing the internal and external factors influencing an organization. After executing the environmental analysis process, management should evaluate it on a continuous basis and use the information gathered to improve its business operations (World Health Organisation Report, January, 2009).

According to Collins, (2000) Cholera and Typhoid are tropical diseases that are mainly transmitted through contaminated water and food. The diseases are closely linked to inadequate environmental management. Mutizwa-Mangiza (2010) said that Harare, Zimbabwe’s capital city has experienced constant interruptions to water supplies, breakdown of sewage pipes, blocked public drains and infrequent garbage collection together with overcrowding; all this has exacerbated the spread of Cholera and Typhoid to other parts of the country resulting in a national outbreak.

1.9 STATEMENT OF THE PROBLEM

As highlighted in the background, human and material resource shortages are the major challenges facing the health sector and consequently the nurses’ training institutions in Zimbabwe.
Brain drain has dealt a hammer blow on the health sector, which has been virtually deserted by nurses and doctors against the backdrop of an acute shortage of drugs. An estimated 63.6 percent of the emigrants are health professionals followed by education at 11.8 percent (The Financial Gazette, 17/July 2011). Although nurses’ training has continued on a high scale in Zimbabwe, it faces a number of challenges creating the need for evaluation of the quality of nurses produced from these training programmes.

It is against this background that the researcher sought to evaluate how the shortage of human and material resources has impacted on the nurses training programmes in Zimbabwe. It is essential for policy makers to recognise what impact these shortages have on the quality of training and subsequently on the health care service providers of tomorrow.

1.9 OBJECTIVES OF THE RESEARCH

Research’s Overall Objective

The main objective of this research was to evaluate the impact of the shortage of human and material resources on nurses training programmes in Zimbabwe over the period January 2009 to December 2012.

Research Specific Objectives were;

1. To establish the effect of material and human resource shortages on both pass rates and competency levels of student nurses and the newly qualified nurses.

2. To examine the extent to which government policies are responsive to changes in the economic environment and the dynamics in the health sector with particular reference to nurses training programmes.
3 To determine management thinking on the strategies that can be employed to overcome the challenges of human and material resource shortages in nursing training programmes.
4 To recommend the best strategies that can be employed in order to improve the quality of nursing training programs and their final end product, the qualified nurse.

1.10 RESEARCH QUESTIONS

The Main Research Question was;

What has been the impact of the shortages of human and material resources on nurses training programmes in Zimbabwe over the period January 2009 to December 2012?

The research sub-questions are as follows;

1 What is the effect of material and human resources shortages on both pass rate and competency levels of student nurses and the newly qualified nurses?
2 To what extent do the government policies respond to changes in economic environment and the dynamics in the health sector with particular reference to nurses training programmes?
3 What is the management thinking on the strategies that can be employed to overcome the challenges of human and material resource shortages in nursing training programmes?
4 What are the best strategies that can be employed in order to improve the quality of nurses' training programmes?
1.12 THE STUDY’S PROPOSITION

The study’s proposition was that; the shortages of human and material resources produced inadequately trained nurses who are less competent than those trained in well resourced settings.

1.13 JUSTIFICATION OF THE STUDY

Reports from World Health Organisation, (WHO) (2010) and other health related documents reveal that there is a critical shortage of human and material resources in Zimbabwe’s public health sector. Accordingly these shortages confronting the public health sector also affect the nurses’ training programmes in the training institutions where these student nurses receive their training. This study sought to assess the impact the shortages have on the nurses training.

Although studies have been conducted in areas of human resource and training of nurses, most studies have often focused on challenges faced by trainers and trainees without looking at the outcome/impact on the end product (nurse) that comes out of such situations. The purpose of this dissertation was to evaluate the impact of human and material shortages on student nurse training programmes in Zimbabwe.

The study attempted to come up with recommendations that would benefit policy makers, health institutions, trainee nurses, the society, the researcher and the academics.

1.13.1 Policy Makers

The findings and recommendations therein will be beneficial to the policy makers as they will show the long-term disadvantages of training students under unsuitable or an ill-equipped environment. Policy makers might become aware of the need to come up with short term plans to deal with unpredictable problems. It might also help in the recommendations for budgets to re-equip and upgrade infrastructure that is vital in training programmes. The study may also be a reference point for other ministries that might have the same training challenges.
1.13.2 Health Institutions
The health institutions which are currently faced with staff shortages may benefit as a result of the research findings. The study will shed light on the possible solutions to the human and material resource shortages in nurses’ training programmes.

1.13.3 Trainee Nurses
The trainee nurses will benefit when the policy makers make corrections of staffing levels at all training institutions. Trainee nurses will come out of training more competent, efficient, fully functional health care providers who can work anywhere in the world.

1.13.4 The Society
The society will benefit by getting high standard of care and will be satisfied with service delivery. High mortality and morbidity rates that are associated with poor quality of care will be reduced.

1.13.5 The Researcher and the Academics
The research will fulfil the requirements for the Master in Business Administration degree for the researcher. It will also aid in the application of learnt concepts to the practical world and will add on to the literature build up and be used as a reference point in future studies.
1.14 SCOPE OF THE STUDY

The study sought to evaluate the impact of the shortage of human and material resources on student nurse training programmes over the period January 2009 to December 2012. Although there are many nurse training programmes, the study was restricted to the three year Registered General Nurse programme. Focus was on student nurses who were still undergoing training, (i.e. second and third year students, and those nurses who qualified between January 2009 and December 2012.) It was conducted at only three training institutions, Parirenyatwa and Chitungwiza Central hospitals and Bindura Provincial Hospital which were of easy access to the researcher.

The targeted respondents were the nurse educators, qualified nurses who supervise trainees, Matrons, Zimbabwe Nurses Council staff, and the trainee nurses.

1.15 STRUCTURE OF THE STUDY

This research is made up of five chapters.

**Chapter 1** introduces the study and provides the background to the study and the nursing training programmes. It also provides the statement of the problem, research objectives, research questions, research proposition, and scope of the study.

**Chapter 2** reviews literature on the impact of shortages of human and material resources on student nurse training programmes. The literature review provides a framework for the discussion of results in chapter four.

**Chapter 3** provides the methodology used in this study. It explains how the research was carried out, sampling methods, research instruments, data collection, processing, analysis and presentation.

**Chapter 4** provides the research results, and analysis of the same.
Chapter 5 covers the conclusions and recommendations arising from the research findings.

1.16 CHAPTER SUMMARY

In this chapter the researcher sought to spell out the challenges of human and material resources faced by the Ministry of Health and Child Welfare with particular emphasis on the nurses’ training institutions. PESTEL and SWOT analyses were used to assess the internal and external factors that influence the operations of the organisations. The two analyses also assisted in bringing out the research’s statement of the problem.
CHAPTER TWO
LITERATURE REVIEW

2.0 INTRODUCTION

Literature review gives an account of what other authors and researchers have published in relation to the same topic that is being researched on. It describes information relevant to a particular topic or area that a researcher is investigating. It helps the researcher to have a good grasp of the subject under review (Anson and Schwegler, 2000).

This chapter provides literature review which relates to the impact of human and material resource shortages on the nurses training programmes in Zimbabwe. The purpose of this review was to give the researcher background information on what other researchers and authors have already discovered in relation to the impact of human and material resource shortages in the health sector, with particular emphasis on the nurses training programmes.

The literature has been organised according to the objectives of the study and different authorities were compared and contrasted in reviewing the literature. The literature review also helped in the discussion of results in chapter four of this research.

2.1 BACKGROUND TO HUMAN AND MATERIAL RESOURCES SHORTAGES IN THE HEALTH SECTOR

“Zimbabwe, just like the other countries in the region, is badly affected by a shortage of health workers. It’s public health sector is faced with several challenges with regard to human resources.” (Mudyarabikwa and Mbengwa, 2006 p 2). The Human Resource for Health (HRH) Strategic Plan for 1997–2007 identified the following four issues of human resource as the major challenges in the health sector;
i. Inadequate number of public health sector workers (less than half the required number);

ii. High levels of emigration, or “brain drain,” to other African countries and beyond;

iii. Increased attrition of health workers due to deaths and resignations; and

iv. Imbalance in the urban/rural distribution of health workers.

According to The Millennium Development Goals Report, (2006) the world has entered a critical period for human resources for health. The scarcity of qualified health personnel, which also includes the nursing profession, is being highlighted as one of the biggest obstacles to achieving health system effectiveness. In January 2004, the High Level Forum on the Health Millennium Development Goals (MDGs) reported, ‘There is a human resources crisis in health, which must be urgently addressed’

The MDGs Report, (2006) through the second high level forum, highlighted several human resource related challenges that are affecting most African countries and these were as follows;

i. Insufficient training opportunities, with the majority (close to two thirds) of Sub Saharan African countries having only one medical school and eleven (11) countries are said not to have even a single medical school at all.

ii. Deteriorating health status of the health workforce due to the effects of the HIV/AIDS pandemic. Statistics have shown that 20 to 40 percent of health workers in Sub Saharan African countries are infected with the HIV virus.

iii. The distribution of health workers in urban and rural areas is grossly imbalanced. Health workers prefer to work in urban areas, leaving quite a number of health institutions in rural areas being manned by untrained workers.

iv. There is a lot of ‘Brain drain’ of health professionals in search of better economic, geographic and working conditions in developed countries or in the private or NGO sectors.

2.1.1 Brief background to student nurse training

According to Zimbabwe nurse training guidelines, (1990) student nurses are expected to go on clinical attachments for their practical experience following a period of theoretical input which normally lasts for about four to six weeks. These clinical attachments to various departments should enable the students to achieve their competencies which are determined through continuous practical assessments by nurse educators and clinical instructors.

Student nurses are expected to be recognized as learners rather than workers. This means that they are only supernumerary. While on clinical attachments, student nurses are expected to perform tasks under supervision of qualified health personnel thus applying theory to practice. The training guidelines show that the majority of the training period is spent on clinical attachment and it is calculated in hours.

2.1.2 Development of a Training Evaluation Plan

To evaluate employee training and learning, it is first necessary to have written learning objectives, stated in an observable, measurable way (Crisp, Gawanas & Sharp,2008) According to these authors, to evaluate teaching, it is necessary to plan for the collection of trend data, evaluation, and extrapolation. To evaluate a training programme mission related goals must be explicitly identified to which the learning objectives are related. It follows then, that in order to obtain good information in each of these areas, the process of curricular development should include the development of an evaluation plan.
2.1.3 Training Levels of Evaluation

Level One: Employee Satisfaction

A common term for this type of evaluation is “the ‘Smiley Face’ evaluation.” The most commonly used are the Likert Scale type which asks the employee to check from a range of options from “poor” to “excellent” to indicate how they felt about the topics covered in the just ended period. The response data shows how the training activity is received by the student. The responses also reveal if the conditions for training were correct. Some of the questions in this level of evaluation ask about the student’s satisfaction with the training facility and instructor in cases of classroom training, the manner of presentation of the content, and whether or not course objectives were met in relation to the student’s expectations.

Crisp et al, (2008) pointed out that, although this type of evaluation does not provide in depth data, it does however provide a quick feedback from the learner’s perspective. Measurement of training effectiveness depends on an understanding of the background and skill level of the training audience. For example, practical training provided to an audience of newly enrolled students will have a different level of effect than that provided to an audience of third year students. Basic demographic data may be collected to aid in data analysis but information regarding the learners’ perception or satisfaction with the course and course material should be collected at the end of the course.

Level Two: Learning and Teaching Effectiveness

According to Crisp et al, (2008) this level of evaluation measures how much information or skill was transmitted from the training activity to the student. The evaluation should be in various formats relative to the level of training. For different cadres of students, the participants could be given a pre-test and a post-test to evaluate the level of knowledge before and after the topic. At an intermediate or advanced training level such as the case with second and third year student nurses, participants should be given some sort of performance test, such as a case study to
solve. At the education level, essay questions exploring concepts would be appropriate. The evaluation format must relate back to the objectives of the learning activity. The Level 2 evaluation also provides instant feedback to teacher and it is more objective than a Level 1 evaluation. It assesses how much the student remembered or demonstrated by skill performance at the end of the session as opposed to level one where it looked at how one felt about it. As previously noted, Level 2 evaluation can be built into each block of instruction and does not need to wait until objective testing. is possibly the most difficult measurement area to address (Crisp et al, 2008).

The most appropriate approach of testing of a student’s knowledge of a particular subject or topic is to include questions or tasks where there is a single right answer. This method is quite relevant at the beginning and at intermediate levels. Questions regarding selection of the best answer among possible options should be reserved for those training environments where there is opportunity for analysis regarding why a particular answer is better than other answers at the end of the training. A Level 2 evaluation measures success in transference of information and skills to the student. It enables the evaluator to determine if a given student may need to repeat the course, or perhaps attend a different type of learning activity presenting the same material in a different format. The evaluator should be able to see if a particular trend of transference problems emerges, and determine whether or not the course itself may need to be reconfigured or perhaps dropped (Crisp et al, 2008).

**Level Three: Trainee Performance Effectiveness**

Crisp et al, (2008) believe that at this level of evaluation it is where the evaluation now asks for more than student input. At this level there is an evaluator who also seeks to evaluate the trainer’s perception of the students’ performance. This is usually done through a structured questionnaire which can be administered 30 to 60 days after the training session has ended. The evaluation assesses the performance relative to the set objectives of the course. In some cases this information is difficult to obtain, especially when the students’ fear to be victimized by their supervisors. When the supervisor only observes the final output of student actions, developing a valid
questionnaire can present a particular challenge. When accomplished successfully, a Level 3 evaluation should begin to show the extent to which the learning activity benefits the programme. Questions appropriate for the learner’s supervisor might include:

- Has the learner used the knowledge obtained in the course to accomplish clinical tasks?
- Has the learner’s performance improved since taking the course?

**Level Four: Training Programme Effectiveness**

Grimshaw and Rubery, (2007) highlighted that Level 4 evaluations can be difficult to undertake and hard to quantify. These can involve structured interviews as a follow up with trainees, their supervisors, and colleagues. They usually involve a comparison of subject matter and outputs produced by a student both before and after training. They can involve some form of benchmarking, or evaluation of the particular training activity in relation to other options for a particular job performance measure. In all cases they involve quantifying the value of resulting improvement in relation to the cost of training.

According to Grimshaw and Rubery, (2007); if properly designed, Level 4 evaluations can help nurse trainers to answer hypothetical questions such as;

“Is it more cost effective to devote limited training resources to the education of a single, newly-appointed nurse, than to devote the same resources to upgrading the existent personnel”?

“Is it a better option to train specialized nurses in various fields commensurate with the dynamics of health and the society”?

The authors believe that level 4 evaluation, determination of purpose and objectives and the method of measurement of skill level should only be done following completion of Level 3 evaluation.
2.2 HUMAN RESOURCE IN TRAINING PROGRAMMES

Gidado as cited in Osarenren-Osaghae, and Irabor, (2012) is of the view that no educational system rises above the quality of its teachers anywhere in the world. Thus the growth and development of skill based courses in any country in the world, largely depends on the quality and adequacy of teachers in the programmes. The bedrock of adequate foundation and training of needed workforce in a country irrespective of area of specialisation is a function of the quality of the teachers in that country. This is the reason why the researcher sought to evaluate the impact caused by the shortage of these teachers in the nurses training programme. Gidado, (1995) also said that the major problems in nurses' training are that the teachers that are being trained are themselves not sufficiently prepared to meet the complex and dynamic demands of the profession.

Mudyarabikwa and Mbengwa, (2006) said that the ever increasing challenges of human resource shortages in the SADC should push the concerned authorities to shift their priorities to improving the management and better distribution of human resources in the health care delivery systems where the shortage of health professionals is experiencing deteriorating standards.

The student nurse training guidelines, (1990) highlighted the goals and objectives of a student nurse during training as follows;

i. The main goal of the student would be on general conduct, they should be able to conduct themselves in a professional manner as shown by their mentors during training.

ii. The student should be able to communicate effectively and acquire necessary skills for a qualified nurse in order to be able to communicate with their patients and other health care team effectively.

iii. The student’s learning environment should stimulate a desire and need for individual lifelong learning and continual growth.

iv. The student should be able to function as a competent nurse within a legal and ethical framework.
v. The student should be able to maintain safety, confidentiality, and rights of the community they serve, and

vi. On completion of training they should be able to function efficiently and effectively as a valued health care team member who is able to meet the needs of the community they serve within the approved scope of practice allowed for a general nurse.

The above expectations are set in an environment that is fully equipped with human and material resources for the learner to be able to acquire the skills and knowledge required to function independently on completion of training.

As reported in earlier reports, Zimbabwe’s health care system has been severely affected by the skills and brain drain that has left its public health sector without adequate experienced and qualified professionals. The exodus is said to have reduced the capacity of the remaining health professionals to train and mentor students during their training. As a result the remaining health workers are sparsely distributed with some rural health centers being manned by untrained personnel. A point of interest to the researcher was how then are these student nurses acquiring their skills and knowledge when they go for their rural attachments during the course of their train

Tanner and Tanner, (2002) said that the success of a curriculum largely depends on teachers that are handling it. Ulinfun, (1990) is of the opinion that in most skill based courses, which the nurses training fall under, education as opposed to liberal education and teachers’ preparation is more compounded because of the practical skills and competencies that must be imparted to the students. This implies that teachers’ quality is more critical in skill based courses. Unfortunately availability and adequacy of qualified trainers is said to be absent in most training institutions in Zimbabwe,

Agbenten, (as cited in Osarenven-Osaghai & Irabor 2012) suggested that shortage of qualified trainers is a worldwide phenomena but more obvious in developing countries where educational systems are constantly expanding without a corresponding increase in the number of qualified trainers. In support of this statement, Aina, (2000) states
that the quality and quantity of teachers in training centers have contributed immensely to high failure rates that are being experienced in training institutions. To overcome this challenge, *qualified trainers must be employed in their right numbers* as well as with the right qualifications.

According to the Principal Nursing Officer at Bindura Hospital, students require constant exposure and interaction with other professional experts such as doctors, dentists, radiographers, and environmental health technicians during training. This, according to Parke, (1977) will help to *improve their competencies and professionalism* as it is one thing to acquire knowledge and skills and quite another to be able to impact such experiences to someone else.

Andreyka, (1996) believes that the most important pre-requisite for the successful implementation of an educational programme is the qualified trainers who are occupationally competent and skilled in that field and should be able to use the teaching methods that are relevant.

### 2.3 IMPACT OF THE HUMAN RESOURCES SHORTAGE ON THE HEALTH CARE SYSTEM.

Buchan, (2006) suggested that shortages experienced in nursing are not just challenges facing the programme, it also has other major effects that impact negatively on health care delivery. Failure to deal with a *nursing shortage*, whether its local, regional, national or global will lead to failure to maintain or improve health care.

Buchan, (2006) believes that from a country level policy perspective, a nurse staffing shortage is usually defined and measured in relation to that country’s own historical staffing levels, resources and estimates of demand for health services. It is the gap between the reality of current availability of nurses and the projected numbers by policy makers in higher level offices.

WHO, (2001) noted that, ‘there is no absolute norm regarding the ‘right’ ratio of physicians or nurses to a given population’. This depends on several factors as follows;
i. Demand factors, e.g. demographic and epidemiological trends, service use patterns and macro-economic conditions;

ii. Supply factors, such as labour market trends, funds to pay salaries, health professions education capacity, licensing and other entry barriers;

iii. Factors affecting productivity, e.g. technology, financial incentives, staff mix, and management flexibility in resource deployment, and

iv. Priority allocated to prevention, treatment and rehabilitation in national health policies. Generally, shortages or oversupply are assessed based on comparisons with countries in the same region or at the same level of development

In a WHO led paper by Zurn, (2002) in which he was examining the issue of imbalances in the health workforce the author noted that there are both ‘economic’ and ‘non-economic’ definitions of skill imbalance, and that these imbalances may be ‘static’ or ‘dynamic’. If static, they are likely to respond only slowly, if at all, to market forces due to regulatory mechanisms, monopoly situations or wage controls, which can exist in health care labour markets.

A shortage would be identified where an imbalance exists between the requirements for nursing skills (usually the number of patients) and the actual availability of nurses. Availability has to be qualified by noting that not all available nurses will actually be willing to work at a specific wage or package of work related benefits (Buchan, 2006). Some nurses may choose alternative non-nursing employment or not to be employed at all.

A shortage is therefore not merely about a numbers game or an economic model, it is about individual and collective decision-making as well as choice (Buchan, 2006). The shortage is not necessarily a shortage of individuals with nursing qualifications; it is a shortage of nurses willing to work as nurses in the present conditions. As such, the search for solutions to shortages of nurses has to focus on the motivation of nurses, and incentives to recruit and retain them, and encourage them back into nursing, as well as on the Strategic Human Resources (SHRM) planning framework.
It must also be noted that in previous decades, nursing shortages in many developed countries have been a cyclical phenomenon, usually as a result of increasing demand outstripping static or more slowly growing supply of nurses (Friss 1994, Buchan 2002, Goodin 2003). However, the current situation may be more serious as there are other compounding variables such as HIV/AIDS pandemic, growing and ageing populations, as well as the increasing demand for health care whilst the supply of available nurses has actually fallen or flattened in both developed and developing countries.

Whilst the causes of shortages are multi-faceted, and there is no single global measure of their extent and nature, there is growing evidence of the impact of relatively low staffing levels on health care delivery and outcomes, despite the difficulties of relating different data sets (Wharrad & Robinson 1999, Anand & Barnighausen 2004, Speybroeck et al. 2006).

Kane et al, as cited in Curtin, (2003) state that in developed countries they use wider range of data sets which enable them to analyse the relationship between nurse staffing levels and measures of health care outcomes. The author suggested that there are quite a number of studies that have been performed which demonstrated relationships between nurse staffing levels and negative health outcomes such as mortality rates post surgery, increased patient accidents and injuries, and high cross infection rates.

Aiken et al, (2001) reported in their paper that the majority of nurses in a number of countries admit that there are not enough nurses to provide quality care in the hospitals they work. In this paper close to half the respondents scored high on work related burnout.

Table 2.1 illustrates the population per doctor and nurse ratios per every 100,000 people in Sub-Saharan Africa. This shows that there is regional shortage of nurses and doctors who are critical in the training of student nurses. In Zimbabwe it shows that there are 6 doctors and 54 nurses for every 100,000 people.
TABLE 2.1 Physicians And Nurses Per 100,000 Population In Sub–Saharan Africa, 2004

<table>
<thead>
<tr>
<th>Country</th>
<th>Physician</th>
<th>Nurses</th>
</tr>
</thead>
<tbody>
<tr>
<td>South Africa</td>
<td>69</td>
<td>388</td>
</tr>
<tr>
<td>Namibia</td>
<td>30</td>
<td>168</td>
</tr>
<tr>
<td>Botswana</td>
<td>29</td>
<td>241</td>
</tr>
<tr>
<td>Kenya</td>
<td>13</td>
<td>90</td>
</tr>
<tr>
<td>Cote d’Ivoire</td>
<td>9</td>
<td>31</td>
</tr>
<tr>
<td>DR Congo</td>
<td>7</td>
<td>44</td>
</tr>
<tr>
<td>Zambia</td>
<td>7</td>
<td>113</td>
</tr>
<tr>
<td>Zimbabwe</td>
<td>6</td>
<td>54</td>
</tr>
<tr>
<td>Uganda</td>
<td>5</td>
<td>5</td>
</tr>
<tr>
<td>Ethiopia</td>
<td>3</td>
<td>19</td>
</tr>
<tr>
<td>Mozambique</td>
<td>2</td>
<td>21</td>
</tr>
<tr>
<td>WHO Recommended Ratio</td>
<td>20</td>
<td>143</td>
</tr>
</tbody>
</table>


Table 2.2 shows the Public Service Commission staffing gaps in Zimbabwe’s MoHCW in the year 2000. This table helps to support the issues of health workforce shortages raised in chapter one. The nurse educator gap was at 68% and that for all categories of nurses at 26%, this helps to support the notions raised in chapter one about the shortages of crucial health personnel needed in the training of nurses.
Table 2.2 Public Service Commission (PSC); Ministry of Health and Child Welfare staffing policy gaps (2000)

<table>
<thead>
<tr>
<th>Category</th>
<th>Ideal Posts</th>
<th>MoHCW Approved Posts</th>
<th>PSC % gap</th>
</tr>
</thead>
<tbody>
<tr>
<td>Doctors and Dentists</td>
<td>1,532</td>
<td>690</td>
<td>55%</td>
</tr>
<tr>
<td>Nurses (All Categories)</td>
<td>11,229</td>
<td>8,339</td>
<td>26%</td>
</tr>
<tr>
<td>Nurse Educators</td>
<td>350</td>
<td>112</td>
<td>68%</td>
</tr>
<tr>
<td>Nurse Aides</td>
<td>2,882</td>
<td>1,087</td>
<td>62%</td>
</tr>
<tr>
<td>Pharmacists</td>
<td>369</td>
<td>156</td>
<td>61%</td>
</tr>
<tr>
<td>Radiographers</td>
<td>283</td>
<td>136</td>
<td>52%</td>
</tr>
<tr>
<td>Public Laboratory Scientists</td>
<td>330</td>
<td>105</td>
<td>68%</td>
</tr>
<tr>
<td>Dental Technicians</td>
<td>229</td>
<td>100</td>
<td>56%</td>
</tr>
</tbody>
</table>

Source: Adapted from MoHCW (1997b), Initiatives Inc (2000).

The OECD, (2004) acknowledged that shortages in the nursing field are an area of importance in policy formulation as numerous studies have established the existence of a positive correlation between higher staff ratios and reduced patient mortality as well as medical complications and desired patient outcomes. The following paragraphs discuss the impact of human and material resource shortages on the provision of patient care.

**Quality**

A report of the Africa Working Group of the Joint Learning Initiative on Human Resources for Health and Development, (2006) acknowledged that the continued supply of trained health workforce is limited. The report highlighted the fact that it is difficult for the diminished workforce to deliver quality health services. Of interest in this
report was the fact that, “The surge in emigration to developed countries supports the fact that African health professionals are trained to the same standards found anywhere in the world” (p. ES4). This fact was of interest to the researcher; in that, is this statement still valid with the high levels of material and human resource shortages in the nurses training programmes in Zimbabwe. The report was also quick to note that there are still factors that limit the performance of the trained health workers.

The United States Department of Health, Education & Welfare [USD-HEW] as cited in Aiken et al, (2006 p11) states that, “The provision of the appropriate amount and type of care by persons possessing the requisite skills to the largest number of patients in the most cost effective and humanly effective manner consistent with desired patient outcomes and personnel needs for satisfaction” This definition was eye catching to the researcher, a nurse herself, in that, the hospital authorities in Zimbabwe, for a long time have been crying about severe shortages of medical personnel with reports in some parts of the media saying two nurses look after 30 patients. If this is the case how does one nurse provide appropriate amount and type of care in the most effective and humanly manner without suffering from fatigue and burnout, and can the same person be able to train a student effectively and efficiently?

A second definition by Giovannetti, as cited by (Aiken et al, 2006 p. 11) states that “Nurse staffing involves the numbers and kinds of personnel required to provide care to the patient or client”. It is from this background that the researcher sought to find out how competent and capable will the product of nurses produced in an environment of human and material resource shortage acquire skills that will enable them to provide the correct type of care required by patients when they themselves probably did not acquire the requisite skills during training.

**Patient Care;**

Brendtro & Hegge, as cited in Harty, (2008), argue that the decrease in nursing care standards seen in most institutions are a result of inadequate training given to nurses during training which is also directly influenced by the shortage of nurse educators.
Clarke & Aiken, (2006) stated that there are several studies that were undertaken in England, USA, Canada, New Zealand, Switzerland, and Russia that revealed that adequate nurse levels together with a conducive working environment have a positive correlation with quality patient care. The studies showed that in hospitals where there is poor work environment, patients have a higher risk of adverse events including death.

Hospitals are often forced to employ agency nurses, or hire what they call “locum” nurses. These are engaged on a short term basis from other organizations to fill in for unavailable local nurses with specific skills. While the locum nurse may be well qualified and provide a valuable service, their tenure is short and the expenses related to their employment are often very high. According to Mullen, (2003) nurses who are brought in to fill urgent staffing needs lack the commitment and engagement of the organisation thereby compromising patient care. This also makes the permanent staff feel that they have to cover for the locum nurses while they are being paid a lesser remuneration package which in turn also compels the nurses not to commit themselves whole heartedly to their nursing care.

Chipunza, (2012) reported Ms Zvavamwe the CEO of Harare Central Hospital as saying, the hospital was overwhelmed with close to 80 percent of the sick being assisted there. There is also a shortage of nurses at the hospital, with two serving a ward of 30 patients against the ideal ratio of one nurse for five patients.

In her report in The Herald, Chipunza, (2012) highlighted that most of the Zimbabwean government hospitals are in a deplorable state and are offering crippled services. This was attributed to inadequate funding by the government. To support this, the Harare Central Hospital Chief Executive Officer, Ms Peggy Zvavamwe said the hospital only received US$958,000 from the Treasury this year, when 25 million dollars was required to operate effectively. Ms Zvavamwe said, “There is also a shortage of nurses at the hospital, with two serving a ward of 30 patients against the ideal ratio of one nurse for five patients”. With such high nurse patient ratios patient care is obviously compromised as it will be difficult to meet all the patients need timeously.
Patient Safety

Clarke & Aiken, (2006) suggested that all institutions that seek to provide or improve patient safety should prioritise on providing adequate nurses, who are qualified and registered as well as an amicable nurse doctor relationship. The authors also pointed out that the management should be responsive to challenges faced by nurses in the process of providing patient care.

Clarke & Aiken, (2006) are of the opinion that a lot of research has been focused on how to prevent errors while the area on patient safety has been neglected. They highlighted that safety experts recommend that latent conditions such as, inadequate education, burnout, fatigue, understaffing, and poor working environment, increase the risk of error in nurses. The safety expects are of the view that if latent conditions are reduced then patient care becomes safer.

The researcher agrees with Clarke & Aiken, (2006) on the fact that these latent conditions have received very little attention as compared to the errors themselves, hence this research study. It is said in this article that dealing with latent conditions requires a change in culture and commitment by top management to adopt different decision making that allows the nurses on the ground more authority according to their level of responsibility and qualification.

As reported in the Institute of Medicines, (1999) the number and degree of medical errors is growing at a dangerous pace. The most common factor cited as a contributing factor to this problem is that of unqualified nursing staff. In a study conducted by the Health Resources and Services Administration, Needleman, Buerhaus and Mattke, (2000) said that researchers uncovered a strong correlation between nurse staffing and five outcomes in medical patients which were; urinary tract infection, pneumonia, shock, upper gastrointestinal bleeding and patient’s length of stay in hospital.

Misdiagnosis

According to Woodward, (2009) correctly diagnosing a patient is critical in providing medical care to people when they are not well. During and after training, nurses are
expected to make correct diagnoses to patients they treat. These skills are gained during training as they work with experienced doctors and nurses. Woodward, (2009) said sometimes an error in diagnosis can occur when either a patient fails to tell the symptoms or they are not readily apparent, which then calls for high level of diagnostic skills. She goes on to say that misdiagnosis can also occur when the nurse or doctor has inadequate training on certain conditions such as failure to diagnose cancer, failure to recognize Deep Vein Thrombosis, Meningitis or failure to diagnose an impending heart attack. Woodward, (2009) points out that failure to make a correct diagnosis after a patient has presented enough signs and symptoms can be a form of medical negligence. Misdiagnosis can result in a patient not getting the proper treatment on time and this can lead to undue injury, delay in the recovery for the patient or death of the patient.

In her article Woodward, (2009) pointed out that surgical procedures require an enormous level of skill because even the slightest mistake can have profound effects on the patient such as infection, sepsis or even death.

2.4 HOW RESPONSIVE ARE MoHCW POLICIES TO CHANGES IN THE SOCIO-ECONOMIC ENVIRONMENT

Braine, (as cited by Yamkella, 2005) said that human resource experts are of the view that resource shortages are an indication of poor governance or weak policies. Braine, (2005) is quoted as saying that these shortages are related to the predominance of new entrants to the health workforce, which he equates to the supply system, as well as to recruitment and retention of health workers.

Health policy issues in Zimbabwe are formulated in the National Health Strategic Plan, the first plan covered the period 1997-2007 whose main theme was “Working for Quality and Equity in Health”. The main objective of the plan was to improve the quality of life of Zimbabweans. Unfortunately this did not happen as planned because the country experienced a severe economic melt-down during the second half of the implementation period. The economic challenges led to decreased funding for most government ministries and as a result the country experienced severe losses of
experienced, qualified health professionals as well as semi-skilled health workers, drug and equipment shortages. Share, (2012) reported that the Health Services Board executive director, Mrs. Ruth Kaseke said that out of the 8 000 vacant posts in the Ministry of Health and Child Welfare, only 1 000 posts were opened up.

All these challenges led to a drastic decline of the health service delivery system in the country. (The National Health Strategy for Zimbabwe; 2009-2013).

The current National Health Strategic Plan, 2009-2013 aims at providing a framework for the immediate resuscitation of the entire health sector as well as assist Zimbabwe to achieve the Millennium Development Goals (MDGs) which were set in January 2004 in Abuja at the High Level Forum on the Health Millennium Development Goals. The Strategic Plan, presents a major departure from the previous plan in that it is focusing on addressing the major health priorities, among them is the human resources crisis. (The National Health Strategy for Zimbabwe; 2009-2013)

The National Health Strategy for Zimbabwe; 2009-2013 report is a strategic planning document that was developed by the Ministry of Health and Child Welfare as part of its endeavour to revitalize the health sector. The document has a section which stipulates the four main goals of the Ministry, which are;

i. Determinants of health goals
ii. Disease and population goals
iii. Health system strengthening goals
iv. Inclusive implementation goals.

Part three of this document covers the area of interest to the researcher, i.e. the specific goals and objectives for health system strengthening.

On the sub topic health service delivery, the following goals 16, 23, and 27 were relevant to this research.

**Goal 16;** To increase the coverage, access and utilisation of affordable, comprehensive and quality health services (human and material resources). The researcher is interested in finding out how competent will be the nurses after going
through training in an environment full of critical shortages of human and material resources.

**Goal 23;** This goal is based on *Human Resources for Health, It says;* To ensure that the health system based on Primary Health Care (PHC) has appropriate numbers and categories of *human resources for health* for efficient and effective implementation of the Health strategy. The researcher was interested in finding out the levels of competency of nurses who are trained in resource limited settings whether they would be able to be efficient and effective after they qualify.

**Goal 27;** To increase availability of *functional equipment*(resources) to ensure the delivery of effective curative and preventive services. In this research the researcher sought to find out if the training institutions had some of these equipment required for curative and diagnostic services. This would aid the researcher to evaluate how the ministry’s responsiveness to changes in the economic environment and to the dynamics in the health sector.

Another area that was tackled by the strategic planning document is that of Health Financing which was covered by objective number 29.

**Goal 29;** To increase the levels of sustainable predictable *financial resource* base to ensure provision of high quality services to the population.

Part three of this document dwells on Governance and Leadership where two goals were of interest to the researcher with regards to this research.

**Goal 30;** To improve governance and management of the health sector and the main objectives under this goal were; To strengthen management and leadership at all levels of the health sector and, To strengthen the role of regulatory bodies and agencies. This area was covered by the researcher during data collection as a means of establishing how flexible is the Ministry of Health and Child Welfare in terms allowing regulatory bodies such as the Nurses Council of Zimbabwe to control training institutions.

**Goal 31;** To strengthen capacity to formulate, develop and implement *health policies and regulations.*
2.5 OVERCOMING HUMAN RESOURCES FOR HEALTH CHALLENGES AT THE SERVICE DELIVERY LEVEL

According to a report by WHO, (2006) the Human Resources for Health (HRH) crisis is being experienced by many health care systems in many developing countries and is said to be the result of several macroeconomic factors as well as poor governance. A comprehensive response to Human Resources for Health (HRH) challenges requires what are termed macro and micro level interventions. Macro level interventions are said to be suited for international and national level action where nations should put their heads together and come up with policies that help affected countries to resolve this human resource for health crisis. At the service delivery level is where institutional or micro level interventions are found. At this level these interventions are expected to be a source of attraction, means of retention of health workers and at the same time find ways to train them as well. The strategies, if well implemented must be effective so as to make the workers feel motivated. The interventions should also help in the equitable distribution of workers in both rural and urban areas.

During the development of the MDGs in December, 2004 in Abuja, Nigeria, the delegates agreed that there is an urgent need to tackle the Human Resource for Health (HRH) crisis otherwise many countries will not be successful in attaining the MDGs. Besides just failing to meet the deadline set to achieve these MDGs, the delegates also highlighted the high probability of disaster in those countries that are seriously affected by the HRH crisis.

This crisis, which is long standing, is compounded by the magnitude of the HIV/AIDS pandemic, which has resulted in excessive workloads that has lead to burnout of the remaining limited health workers, high worker attrition rates. These factors are believed to have painted an unattractive picture to the health profession as a whole. The younger generations seem to shun away from the health sector professions. The second High Level Forum on MDGs delegates adopted a conclusion that the way to resolve this crisis would be to deal with the macroeconomic issues affecting each country. In addition to tackling the macroeconomic issues, the countries were also urged to address the underlying factors that influence the attraction and retention of
human resources. To support the factors on HRH crisis, WHO, (2006) published a comprehensive report that illustrated statistics on the current status of the health workforce internationally. Some of the data is illustrated in tables to come in this chapter.

According to the Global Health Workforce Alliance, (2006) 11% of the world’s population is found in Sub-Saharan Africa and yet it is suffered a whopping 24% of the world’s disease burden. Of significance to note as well is the low percentage of the health workforce that looks after this affected population, just 3% of the global health workforce. The Global Health Workforce Alliance, (2006) reported that only less than 1% of the world’s financial resources are spent on health in Sub-Sahara African countries. In most developing countries, the health workforce is concentrated in major towns and cities, while rural areas, on average, contain only 23% of the country’s doctors and 38% of its nurses. Imbalances exist not only in the total numbers and geographical distribution of health workers, but also in the skills mix of available health workers. WHO, (2006) estimates that 57 countries worldwide, 36 of which are in sub-Saharan Africa, have such a critical shortage of health workers that the countries would need to increase their health workforce by about 140% to achieve enough coverage for essential health interventions in order to make a positive difference in the health and life expectancy of their populations.

2.6 REASONS FOR THE HUMAN RESOURCE CRISIS

According to Mudyarabikwa and Mbengwa, (2006) the major challenges to building an effective health care workforce in developing countries include;

i. Low absolute numbers of trained health workers;

ii. Difficulties in recruiting, retaining, and managing health workers;

iii. The impact of HIV/AIDS on the health workforce; and

iv. Poor worker performance.
i. Low Absolute Numbers of Trained Health Workers

According to Grimshaw and Rubery, (2007), as cited in Zimbabwe Health System Assessment 2010, (2011) in many developing countries, the capacity for training health workers is limited. For example, Ethiopia, with a population of 75 million, trains about 200 doctors a year, whereas the United Kingdom, with a population of 60 million, trains more than 6,000 doctors a year. Two thirds of the countries in Sub-Saharan Africa have only one medical school, and some countries actually have none at all. In addition to the low capacity for training, there is a growing sense that in Sub-Saharan Africa, the medical profession have become less attractive to new entrants due to low salaries in the public sector, low morale among existing health service providers, dilapidated health systems, and fear of contracting HIV infection. These factors need to be researched further to understand the role they play in attracting and retaining a high quality health care workforce.

ii. Difficulties with Recruitment and Retaining, And Managing Health Workers;

Many facilities face difficulties in recruiting and retaining health staff because of the push and pull factors. Health workers usually search for better working environments that offer good salaries, training opportunities, and conducive working environments. These opportunities are commonly found in developed countries, the private and NGO sectors. Worker migration can be locally where workers move from public to private or NGO sector or it can be from rural to urban areas. Another form of migration is when workers move from hospital settings to administrative jobs or out of the health sector to a totally different sector altogether.

According to O’Brien and Gostin, (2011) the search for better working environment is the main factor associated with migration of workers. Push factors are those variables that influence a person to leave their place of employment because one is not content with the prevailing conditions. Workers usually cite reasons like; low salaries, poor working conditions, lack of incentives such as staff development or risk allowances, and low pension or retirement benefits.
O’Brien and Gostin, (2011) suggest that pull factors are associated with conditions that attract workers to certain jobs or countries. These include such things as high salaries, worker incentives such as high retirement or pension benefits, high risk allowances, and performance related packages as well as conducive working environment.

Huddart, Furth, and Lyons, (2006) carried out a study in Zambia on reasons for staff loss. His report showed that there were annual loss rate of staff that ranged from 20% to 36% for clinical officers, midwives, nurses, and doctors. In Malawi, Huddart et al, (2006) found out that the main causes of staff loss in health workers were deaths and resignations. Following these two occurrences it was noted that most posts remained unoccupied because no personnel would be willing to join the health sector.

iii. Poor Worker Performance

The Lancet (2005) reported that most health care workers had problems providing high level care. An article published in the Lancet volume 18 of 2005, reported that workers’ performance was also determined by attributes like knowledge levels, skills, experience, motivation, and attitudes of the workers towards the type of job, the patients as well as the work environment.

The review also listed non health worker factors, such as the quality of the guidelines workers are expected to follow and the health facility environment such as workload, availability of equipment, attitudes of co-workers and supervisors, and the degree of control workers have over the work environment. It also mentioned external factors, such as the socioeconomic and political environments of the country or region in which the workers are practicing.

Manongi et al, (2007) carried out a study to explore health workers’ experience in lower level health care settings in Tanzania. The study revealed that workers were not satisfied with multitasking in an environment that is characterised by human resource shortages. Workers expressed the need for support from their supervisors, transparency and opportunities for career development.
2.7 HOW TO REDUCE SHORTAGES OF HUMAN RESOURCES IN NURSING PROGRAMMES

Stated below, in the following paragraphs are measures meant to assist with solutions to the problems of human resource shortages in nurses’ training programmes in Zimbabwe.

2.7.1 Employee Incentives

The role of employees in developed nations has become more defined in the new era of “High Performance Work Systems”. Employees now work on set targets with incentives given to those that surpass their targets (James, 2007). However Armstrong, (2008) argued that, incentives work only if the link between effort and reward is clear and the value of the reward is worth the effort. Furthermore Porter and Lawler, (1998) suggested that incentives may be more effective if they satisfy employee’s needs for security, social esteem, autonomy, and self-actualization.

2.7.2 Perquisites

Perquisites also known as ‘perks’ comprise elements of remuneration additional to the various forms of cash pay and also include provisions for employees that are not strictly remuneration, such as annual holidays (Touborg , 2007). Although not the real cause of skills flight by many professionals, perquisites are usually used as pull factors by developed nations to reduce labour shortages in growing sectors of their economy (Denver, 1998). For instance, Australia gave very attractive perks to civil engineers, metallurgists and mining specialists when their mining sector almost collapsed due to labour shortages (George, 2009).

2.7.3 Remuneration level

Remuneration in the form of money is a powerful force that leads to skills flight as it links directly or indirectly to the satisfaction of many needs (Robson, 2002). Money may in itself have no intrinsic meaning, but it acquires significant motivating power.
because it comes to symbolize so many intangible goals (Armstrong, 2004). However, Jacques (2001) argued that a badly designed and managed remuneration system can demotivate employees. Where large income differentials exist and employees believe the remuneration system does not clearly relate to effort or level of responsibility, skills are likely to move to where they perceive they are more appreciated (Armstrong, 2004).

As for African states, Mhute, (2007) suggested that in order for the governments to be able to attract back or at least keep the remaining health workers, there was need for them to create a conducive environment for investment by locals and outsiders. The need for coming up with attractive worker benefits or incentives was also highlighted.

Thorn, (2008) argued that the strategy of using just financial incentives was on its own inadequate to attract back workers who migrated to other countries that had lucrative pull factors. Thorn, (2008) suggested that this area of finding ways of attracting back health professionals needed to be researched thoroughly.

Vujicic, Zurn, Diallo and Dal Poz, (2004) revealed that decisions by health workers to leave their countries to go to developing countries had nothing to do with the differences in salaries between the country of origin and the foreign country.

However, in a bid to turn the adversity of skills flight in University of Dares alum the faculty of Engineering reviewed their faculty member’s salary from a mere USD40 a month up to USD1100 a month resulting in a sharp rise of skills retention of 98% by 2009.

Mhute, (2007) suggested that there were other factors that influenced a person to return to their country other than financial benefits. He noted that factors such as living close to one’s family, cultural differences with those of intended country of destination, and also the wish to invest back home and contribute towards the development of one’s country.

Contrary to Mhute’s observations, Arango, (2000) is of the opinion that brain and skills drain is influenced by the resultant better living conditions so much that the incurred costs are outweighed by net gain that follows when one has settled.
2.7.4 Staff development programmes

Leipziger, (2005) suggested that besides financial gains there are other factors that influence workers to remain at place of employment. The author points out that strategies such as staff developmental programmes together with remuneration should be employed by organisations.

According to Armstrong (2004) staff development programs gives employees job security which usually leads to a psychological contract between the employers and the employees.

2.7.5 Recruiting and training nurse teachers

The National Health Strategic Plan for Zimbabwe, 2009-2013 indicated that there have been numerous long term solutions proposed to address the nurse trainer shortage. First and foremost is the recruitment and training of a significantly larger pool of nurse educators. The minister of Health and Child Welfare, Dr Madzorera was quoted in the media saying that, in order for increased recruitment to be successful, this nation must commit significant resources to the expansion of nursing faculties and, ultimately, the expansion of existing nursing schools themselves. This will require a large economic investment. In addition, it means capital expenditures are needed to create the best training environment for students.

2.7.6 Encouraging immigration of foreign nurse trainers

Support for Analysis and Research in Africa [SARA], (2003) reported that another form of solution being proposed is encouraging the immigration of foreign nurse trainers who are well qualified. While this may sound attractive in the short term, it may not be feasible for many institutions, as it can take years to see the investment in these efforts realized, and has frankly failed in many.
SARA, (2003) believes that these strategies are long term in nature and can anticipate another decade of worsening shortages before the picture starts to improve. In the meantime, however, strategies focusing on improving retention through improving the workplace environment and empowering nurses with emotional management skills are showing promising results.

2.7.7 Create an Internal Environment to Retain More Staff

SARA, (2003) suggests that retention is certainly the big strategy in both the short and long term. To retain valued staff, the organization’s leadership must create a working environment that;

i. Rewards accomplishment
ii. Provides attractive compensation and benefits
iii. Provides employment stability
iv. Respects and recognizes the premier care-giving role of the nurse in the health care setting
v. Elevates the status of nurse trainers within the workplace setting
vi. Provides on-going education and training that updates and expands a nurse’s trainers skill level and personal development
vii. Provides autonomy and self-governance.

Nurse trainers need an environment where they have the materials to do their job, where they have a supervisor concerned about their development, where they have peers interested in delivering excellent care, where they have a chance to do their best every day, where managers communicate a vision for the organization and the nurses know and understand how they fit in and make a difference. Without these qualities, stress will continue to harm every facet of the health care system, compromising quality of training, and needed to revitalise the system SARA, (2003).
SARA, (2003) stated that these strategies require a sincere commitment that begins at the top of the organization and spreads through the organization. More often than not a major change in the corporate culture of the organization is required, which can be achieved through consistent leadership development emphasizing emotional skills and self-management.

### 2.7.8. Increase the Number of Trained Health Workers

Support for Analysis and Research in Africa [SARA], (2003) reported that efforts to train existing health workers in developing countries are growing as wealthier nations increase aid to these countries and recognize the futility of providing lifesaving medicines in the absence of properly educated medical personnel. National governments of developing countries are also beginning to increase investments in training more health workers, but these investments have so far fallen short of what is needed.

SARA, (2003) highlighted that some innovative approaches to increasing the number of trained health workers and for developing training programs to address some of the challenges associated with distribution of health workers globally have been attempted in a number of countries. For example, some countries offer free medical training to students from developing countries. A good example is Cuba, which graduated about 4,000 international students from its medical schools between 1966 and 2004.

### 2.7.9 Decrease the Barriers to Hiring New Staff

A Capacity Development Project funded by USAID in 2010 highlighted that there was need for what they termed the Emergency Hiring Plan (EHP). This was model they introduced to facilitate the improvement of qualified health professional for public health sectors. Kenya was given as one example where the EHP has facilitated fast track hiring and training of health workers in its Ministry of Health.
2.7.10 Reduce Migration

A lot of organizations have put their heads together in order to come up with ways of decreasing international and regional migration of health workers. Reid, (2004) reported through the Joint Learning Initiative on Human Resources that brain drain of health professionals due to international migration has reached serious proportions and is likely to be the single most important source of attrition from the health workforce in many countries in the region.

Reid, (2004) observed that even though most workers identify salary level as an important push or pull factor, it is not the only factor in worker retention. Good accommodation, quality of health-care facilities, and the welfare of the worker’s entire family are all important in the professional development of health workers. Reid, (2004) also noted that a common strategy for increasing the number of health workers in rural areas is to provide training opportunities for students who come from rural areas. Studies undertaken in developed countries, according to Reid, (2004) have shown that students who come from rural areas have higher chances of wanting to work in rural areas after completing their training. Again the study showed that attaching students to rural areas for longer periods during training can also influence their decisions to want to work in rural areas.

The report acknowledged that higher salaries for rural workers would have the most effect on staff retention. In addition to this it was highlighted that non financial incentives such as good accommodation, conducive working environment, good conditions of service, and increased career opportunities were also important.

2.8 MATERIAL RESOURCES IN TRAINING PROGRAMME

Wehmeier, McIntosh, Turnbull and Ashby, (2005) define resource as a supply of something that a country, organization or person has. This is usually used to increase
their wealth. Another definition of material resource is given as an asset, equipment or capital that is used to accomplish a goal (Anonymous, 2010).

According to Moreira, Saes, Doria & Trenhn, (2003) material resources in most health institutions pose a major challenge for the nursing practice. It is believed by the authors that it is an area of significance in the nursing profession. Castilho & Leite, as cited by Moreira et al, (2003) pointed out that material resources account for about 75% of an organization’s capital and an institution spends between 30%-40% of its expenditure on material resources.

2.8.1 Material resources and their impact on Training Programmes

For students to acquire the desired skills to be able to function effectively, the necessary equipment, drugs, and machinery need to be sufficiently available in order for the teacher to teach the students effectively. The training centers must be adequately stocked with functional equipment and machines in their right quantities and quality. In addition to quality equipment, teachers also need to keep abreast with new technology, new developments and the dynamics of the sector.

Bans, (2007) suggests that there is the need to update training facilities as frequently as possible and at the same time make training environment a replica of the industry. Materials need to be adequately available in relation to students' population. Lack of equipment and appropriate facilities hinder progress of skill based courses.

Nweke (1989), Nwokolo (1993), Ibeneme (1994) discovered that the discrepancy between training centres and the actual work facilities may adequately account for the amount of training given to graduates before they can effectively perform in the areas they have been trained. Okoro, (1993) discovered that the major purpose of vocational education is not to give certificate but to train workers who can actually function well in their places of employment. The researcher a nurse by profession, is of the same view as Okoro, on completion of training the expected outcome is that the nurse should be
able to function well with minimal or no supervision as they are expected to be deployed to rural health centres where they will be in charge of personnel who are less qualified than themselves.

The equipment and machinery actually make education in skill based courses unique. Such equipment, machinery and materials in the practical area provide the students with worthwhile experiences and skills. Fajemirokan (1999) observed that instructional materials are either inadequate in quantity or are obsolete in quality and use. According to Odusanya (1999) reasons for poor quality graduate nurses were that relevant equipment and machinery were not adequately supplied to go round the students in the practical areas.

Towe, (2007) reported that the school environment was not conducive for learning. To ensure optimum teaching and learning, vocational and technical departments in the training centers are expected to be adequately provided with requisite instructional facilities and equipment. The author noted that where the requisite teaching and learning materials are non-existence or inadequate, effective instruction cannot take place. In support of this, Ali, (2006) suggested the economic advancement of any nation does not necessarily depend on its natural resources endowment but increasingly on the level of technological innovation and capabilities.

Ali, (2006) asserts that this is only achievable through the necessary human and material resources in their right quantities and quality for the teaching and learning of skill based courses. Anthony, (2005) is of the view that well equipped teaching facilities help to stimulate interest of the learner and thus produce sound and well grounded skilled graduates.

2.8. 2 Strategies to reduce the Impact of Material Shortages

Moreira et al, (2003) suggested that an organization’s policies should take cognisance of its material resources, its diversity and should strive to constantly upgrade its equipment and technology for the provision of quality service. The writers cited Maeda & Campedell as saying that issues of quality and sufficient
quantity should be considered in order to fulfill the needs of the patient and in this case the needs of the student nurse during training.

According to Ferraro, (2012) every hospital or institution should have a resource management team. He believes that resource management provides a system where resources; (equipment, products and technology) are assessed periodically and replacements made on time. He explained further to say that the objective of resource management among other things is to improve performance and to cut costs, while maintaining or improving the quality of care that is given to patients. In this research the researcher did not have the chance to establish if the training institutions in the research had any material resource management teams.

2.9 Conceptual Framework

According to Reichel and Ramey, as cited in Smyth, (2004) a conceptual framework is a constructed set of ideas extrapolated from relevant literature which is used to come up with an intended presentation in research. In other words a conceptual framework is a diagrammatic representation of the key issues in literature review which should answer the main research question. From the reviewed literature, the researcher deduced a diagrammatic representation of the impact of human and material resource shortages on the nurses training programmes in Zimbabwe as illustrated in Figure 2.1.
Shortage of Human Resources in training schools

Brain & Skills Drain

Factors
- Lack of Human & Material Resources;
  - Nurse Educators, Senior Nurses, Doctors, Pharmacists, etc, Equipment, Machinery, ICT,

Underlying Factors
- Low Salaries
- Poor Working Environment
- Ageing Workforce, HIV/AIDS
- Lack of Incentives
- Lack of Training Opportunities
- Policy Issues, Government Funding, Fixed Staff Establishments,

Outcomes
- High Death Rates
- Compromised Patient Safety
- Misdiagnosis
- Poor Patient Care
- Low Competencies in Trained Nurses

Control and Management of Resources

Political, Socio-economic, Technological & Environmental Factors

Figure 2.1 Conceptual Framework: Source: Researcher’s Consolidation from Literature Review in Chapter 2.
2.10 CHAPTER SUMMARY

This chapter provided literature on impact of human and material resources shortages on health institutions in Zimbabwe, regionally and internationally. It explored literature that dwelt on the impact of human and material resources shortages that were done in a range of countries. Literature gave evidence of the negative impact brought about by shortages of personnel, equipment, and technology. Some of the literature in this chapter was on the impact of human and material resource shortages in non-training institutions. The researcher used this literature on the basis that the same effects observed in those institutions are similar to those observed in training institutions. The literature justified the need for adequate resources in the provision of quality care be it to patients or to student nurses during training.

It was also noted that there is serious shortage of doctors, nurses, dentists, radiographers and pharmacists in the country who play a significant role in the training of student nurses.

Literature review also highlighted issues such as the realization of the need for skill based training programmes like the nurses training, to be fully equipped as these help to develop skilled manpower for self reliance, community and national development. It was also realized that shortages in human and material resources lead to decreased quality care, patient safety, and misdiagnosis. With all this in mind the researcher was really keen to find out how competent are the nurses trained in an environment of these shortages.

It has been noted that there is the need to update training facilities and make the training environment a replica of the industry. This is very important because when student nurses train in poorly equipped institutions they are expected to work at hospitals with state of the art equipment locally, regionally or internationally and at the same time they represent the training institution as well as the country they trained at.

In conclusion most writers have shown that there is correlation between quality and amount of resources available, be it human or material resources.
The literature review provides the basis for the discussion of results in chapter four. The next chapter gives a descriptive account of how the study was conducted by outlining the methodology that was used to achieve the goals of the study.
CHAPTER THREE

RESEARCH METHODOLOGY

3.0 INTRODUCTION
This chapter gives a descriptive account of how the study was conducted. It outlines the methods used by the researcher to collect, classify, analyse, and present data. The chapter also looks at the research philosophy, research design and strategies, the target population, sample size, and the sampling methods used by the researcher. The data collection instruments and issues of validity and reliability are discussed in this chapter together with how the instrument was administered and how the data analysis was carried out. In addition, limitations to the research study together with advantages, disadvantages and justifications for adopting such strategies are all discussed in this chapter.

According to Haralambos and Holborn (2004) a research methodology is essentially an outline of the methods employed to reach a conclusion.

3.1 RESEARCH DESIGN
A research design is the research strategy or method developed by the researcher to effectively carry out the research activity (Cooper and Schindler, 2006). Bryman, (2000) describes a research design as the plan and structure of investigations used to obtain answers to research questions. He said that, the plan is the overall scheme of the research which includes an outline of how the researcher will conduct the research right from the beginning at formulation of statement of the problem until the end at data analysis.
3.2 RESEARCH PHILOSOPHY

O’Leary says that research philosophy is the paradigm or orientation that a researcher takes in addressing a problem at hand. Another author with a similar view is Anderson, (2004) who defined a research philosophy as a process through which researchers try to systematically answer questions to problems with the support of data.

Saunders, Lewis and Thornhill (2003) suggested that a research philosophy depends on how the researcher views the development of knowledge. Thus Saunders et al (2003) identified two views of the research process; namely, Positivism or quantitative research and Phenomenology or qualitative research. Saunders and his colleagues argued that quantitative research or positivism is an objective approach to research whereas qualitative research or phenomenology is a subjective approach. White (2000) is of the opinion that qualitative and quantitative methods can be used together in the same study.

According to Dillon (2005) qualitative research methods are techniques involving small numbers of respondents who provide information about their thoughts and feelings that are not easily projected to the whole population.

3.2.1 Positivism Philosophy

Wegner (2005) says that positivism philosophy is the view that serious scientific inquiry should not search for ultimate causes arising from outside sources, but should limit itself to the study of relations existing between facts that are directly accessible to observation.

Bryman and Bell (2003) view positivism philosophy as an enquiry that is grounded on the assumption that features of the social environment constitute an objective reality that is relatively constant across settings. They go a step further to say that the dominant methodology is to describe and explain features of this reality by collecting
numerical data on observable behaviours of samples and by subjecting these data to statistical analysis. This was used in this research as explained below.

**Features of Positivism Philosophy**

The following are the seven features of positivism described by Bryman and Bell, (2003).

(i) The independence of the observer from what is being observed,
(ii) Value freedom, which they describe as the determination of what to study by objective criteria rather than by human beliefs and interests,
(iii) Hypothesising and testing the hypothesis,
(iv) Causal explanation of irregularities in human social behaviour,
(v) Operationalising concepts in a manner which can be quantitatively analysed,
(vi) Reduction of problems to their simplest possible elements,
(vii) Generalisation based on a study of a sample, a cross sectional analysis.

**3.2.2 Phenomenology**

Fraenkel and Wallen (2006) said that phenomenology is the study of the world as perceived by individuals devoid of everyday biases and beliefs. They further elaborated that in phenomenological research, the researcher is closely involved with the phenomena under study and acquires deeper knowledge about the object being studied through personal experiences. Saunders et al, (2003) said that phenomenology is characterised by an attempt by the researcher to understand what is happening and why it is happening.

According to Robson (2002) there are three features of phenomenology research which are;

(i) Approach is qualitative
(ii) Applicable more to small samples
(iii) Provides better understanding of the social processes, but with a disadvantage that a clear pattern may not emerge.

In qualitative research usually there is no need to postulate a hypothesis whereas in quantitative research a hypothesis is essential. For these and other differences, champions of quantitative research argue that it is scientific and qualitative research is not (Easterby, Thorpe and Lowe (2002).

3.2.3 Realism
Other authors like O'Leary, (2005) talk of realism, which, according to him is based on the belief that reality exists and is independent of human thoughts and beliefs. He suggested that this view implies that the social world exists separate from how the individual perceives it. Saunders et al, (2003) puts up an interesting argument, they said that in business research realism can be seen as an indication that there are large social scale forces and processes that affect people without them being necessarily aware of the existence of their influences on their interpretations and behaviours. They said that in business research, the best way a researcher can best understand the business environment is through observation.

This study, relied on responses from questionnaires and interviews, and also from what the researcher observed, it therefore adopted realism as a research philosophy.

3.2.4 Interpretivism

Interpretivism is yet another research philosophy described by authors such as Laws and McLeod, (2006) who said interpretive research is mainly concerned with meaning and seeks to understand social members’ definition of a situation. They argue that it is a philosophical view in which all knowledge is constructed in as much as it is in line with human perception and social experiences.

Saunders et al (2003) claim that the social world of business and management is far too complex to be suitable for making theories using definite laws in the same way as
physical science. They believe that rich insights into the complexities of the world will be lost if these complexities are reduced to mere generalisations. Interpretivism’s starting point is its insistence on differentiating between the nature of the phenomena investigated by the natural sciences and the nature of those studied by historians, social scientists and educational researchers. In particular, it argues that people, unlike non-human forms of life, interpret their environment and themselves in ways that are shaped by the particular cultures which they live in. Interpretivists argue that we cannot understand why people do what they do, why particular institutions exist and operate in characteristic ways, without grasping how people interpret and make sense of their world, that is, the distinctive nature of their beliefs and attitudes.

In this study, the researcher agrees with the authors who say the two approaches are complimentary, hence the use of triangulation where a combination of two approaches was used; i.e. the positivism approach and the phenomenological approach. The researcher is in agreement with Saunders et al, (2003) who stated that it is inappropriate to think that one research approach is better than the other as both approaches are “better” at doing different things. The researcher used both the two approaches and found them to be complimentary to each other. Denscombe, (1999) suggested that qualitative research can help to interpret and better understand complexities of reality of a given situation when used together with quantitative methods.

Saunders et al, (2003) said that the approach one takes makes it possible for them to take a more informed position about their research design, as well as what evidence to gather and from who, where, and how to interpret the evidence. As said earlier on by Pope and Mays, (2000) it is possible to predict the phenomenon with a starting point of what is known already. The researcher predicted in her study proposition that the shortages of human and material resources impacted negatively on the nurses training programme by producing less competent nurses than those trained in well resourced settings.
The researcher adopted a positivist approach in that a survey was conducted using structured questionnaires which were administered to student nurses, newly qualified nurses, and key informants within the Ministry of Health and Child Welfare. The researcher adopted the phenomenological approach as well, as it was more applicable in view of the small sample size used in this study and the data collection methods were therefore both qualitative and quantitative.

Moreover, the triangulation approach was adopted due to the fact that both quantitative and qualitative data was collected in order to answer objectives of this study. The quantitative data was derived from variables like pass rates whilst qualitative data was more of respondents’ views on the issues raised in data collection tools.

3.3 Research Approaches

According to Wegner (2005), it is said, while working on a research project, it is very important to decide which research approach would be best for one’s research. There are mainly two types of research approaches; namely, the deductive approach and the inductive approach.

It might be debatable which approach is more effective and accurate. Baggetun, Rusman and Poggi, (2007) proposed an interesting answer to this question. They argued that deductive and inductive processes go hand in hand. They said a pattern can be written based on recurrent observations of many instances but a pattern can also be written based on the knowledge of general concepts in the field which are used to analyse observations.

Schadewitz and Jachna, (2007) are of the view that deductive research approach is associated with positivism paradigm whereas inductive research approach is associated with interprevitism approach.
3.3.1 Deductive Approach

Burney and Saleen, (2008) are of the opinion that deductive reasoning starts from a rather general approach of reasoning narrowing down to a more specific approach. Some people call this a top-down approach. The authors suggest that the conclusion follows logically from available facts.

Gill and Johnson, (2002) proposed that deductive research approach allows the researcher to establish a hypothesis by using theory and a variety of data and information is collected by the researcher to confirm or reject the hypothesis to resolve issues. They went on to say that a deductive approach entails the development of a conceptual and theoretical framework prior to its testing through empirical observations. These authors are of the view that for many researchers working within the deductive approach, the source of one’s theory is of little significance. They believe that it is the creative element in the process of science that is essentially not analysable, and that what is important is the logic of deduction and the operationalisation process and how it involves the consequent testing of the theory by its confrontation with the empirical world.

3.3.2 Inductive Approach

Gill and Johnson, (2002) went on to describe inductive approach as the opposite of deductive approach. They said that it entails moving from the ‘plane’ of observation of the empirical world to the construction of explanations and theories of what has been observed.

Burney and Saleen, (2008) are of the same opinion as Gill and Johnson (2002); they said that inductive reasoning works the other way as opposed to deductive reasoning, it moves from specific observations to broader generalisations and theories. They said informally it is called the bottom-up approach, where conclusion is likely to be based on premises and at times can involve a degree of uncertainty.

Mertens, (2008) describes inductive research as a flexible approach which does not require a pre-determined theory to collect data and information. He said that the
researcher uses observed data and facts to reach a tentative hypothesis and defines a theory as per the research problem. Since this research was looking at one particular nurses’ training programme among many other programmes, at specific training institutions, the researcher adopted an inductive approach.

3.4 Research Strategies

According to Bryman and Bell, (2003) a research strategy provides the road map on how a business research should be carried out in order for it to address the research objectives. Strauss, (1987) believes that researchers should use more than one research strategy since they all have their own strengths and weaknesses which affect the research results differently and this also has the benefit of capitalising on the different strengths of each strategy. Some authors such as Benbasat (1997) believe that no research strategy is more superior to the other except in situations that demand the use of a specific strategy. They say each research strategy has advantages and disadvantages.

3.4.1 Descriptive Survey

This focuses on the systematic description of the salient aspects of a situation with a focus on the findings that emerge. It tries to point out a factual and accurate picture of a population, institution or situation as it is.

Wegner, (2002) talks of three approaches of how interview data can be gathered;

(i) Postal surveys
(ii) Personal interviews
(iii) Telephone surveys

Wegner says the choices of which method to use is influenced by factors such as sample size, location and costs. E-mail is cheaper and faster than postal mail and in general, both are less time consuming but have a low response rate when compared to the personal interviews. According to Gill and Johnson, (2002) the email surveys have become increasingly popular when conducting self-administered questionnaires.
Denscombe, (1999) said that surveys usually describe the present state of affairs and attempt to provide a true picture of the situation at a particular time when the data was collected. He describes the process as literally getting out of the office and going out to seek information out there, “straight from the horses’ mouth”. He describes it as purposeful and structured. Most authors tend to argue that survey researches have a tendency to focus on data more than theory but are quick to conclude that good survey research is not devoid of theory entirely, they emphasise more on data.

As suggested earlier on by Saunders et al, (2000), surveys are more associated with huge samples but it is possible that they can be used in small scale qualitative researches. Hughes, (1997) concurs with this point when he said; the crucial point is not so much the number of people or events involved but the breadth of coverage. He says that the idea behind surveys is the concept of a span of vision which should be wide and inclusive. As illustrated in table 3.1, this is one of the advantages of the survey method. Due to this aspect of wider breadth of coverage it means it is more likely than other methods to capture data that can be representative of the population under study and thereby being more generalisable. It is for this reason that this researcher chose this method to conduct her research.

One other advantage of survey researches is that of standardisation of questions which makes validity and reliability more accurate. This makes it possible to get similar responses thereby making interpretation of results more comparable. Observer subjectivity is grossly minimised but there are related disadvantages to standardisation. One such disadvantage is the possibility of the researcher to develop questions that are too general to be appropriate for all respondents, thereby increasing the chances of missing vital information in the process. Another disadvantage of this method is the possibility of getting responses that are inaccurate or participants not being honest. Although researchers are able to check on the accuracy or honesty of the responses, the limiting factor might be on the resources required to do so.
Table 3.1: Advantages and Disadvantages of Survey Method:

<table>
<thead>
<tr>
<th>Advantages</th>
<th>Disadvantages</th>
</tr>
</thead>
<tbody>
<tr>
<td>Collects huge amounts of data at a particular time; its more representative of the population under study.</td>
<td>For quantitative research, survey method makes data collection narrow.</td>
</tr>
<tr>
<td>Standardisation of data which allows for easy comparison</td>
<td>Researcher relies more on questionnaires than any other instrument.</td>
</tr>
<tr>
<td>It allows more control on the overall research process.</td>
<td>It is time consuming in designing and test piloting of questionnaires</td>
</tr>
</tbody>
</table>

Source: Adapted from Saunders et al, (2003)

3.4.2 Case Studies

According to Fraenkel and Wallen (2006), a case study is the in-depth study of a phenomenon in its natural occurrence and from the perspective of the participants involved in that research. Benbasat, (1997) also agrees with the above definition as he said a case study examines an occurrence in its natural setting where it gathers information using several methods of data collection from one or many scenarios.

White, (2000) is of the opinion that a case study tries by all means to answer the following questions in great detail; How, What and Why a phenomenon is occurring in a certain way. He also suggests that a situation can be studied in its natural setting while meaningful theories can be generated from the observations. He points out that case studies are relatively cheap as compared to other methods that require the use of expensive technology and that the data obtained are often very interesting and specific to the case under study.

Swanborn, (2010) is of the same view as White; that case studies are a preferred strategy when a researcher wishes to answer the How and Why questions and adds that a researcher has little control over events under study. “A case study usually contains qualitative as well as quantitative elements...”(Swanborn, 2010 p viii).
Saunders et al, (2000) believes that a case study focuses on a particular group of people who share some things in common. Another author with a different point of view is Yin, (1984) who thinks that case studies are ideal for someone who wants to study certain specific characteristics of a rare or extreme situation in which an organisation or institution finds itself in. Nurses training institutions found themselves in a situation where the economy was facing a lot of challenges that resulted in critical shortages of human and material resources that are badly needed for the effective and efficient training of nurses.

The researcher managed to ask the "how" and "why" questions, so as to understand the nature and effects of human resources and material shortages on quality of nurses and pass rate. The researcher also selected the case study strategy because of the limited time to carry out the research and accessibility to research information.

3.4.3 Historical Research

Historical research attempts to make an accurate and authentic reconstruction of the past through the systematic analysis of available information while emphasis is on objectivity and authenticity of evidence. The typical purposes of the historical research are an accurate record of past events, the interpretation and evaluation of present day problem and procedures and the determination of causal relationships.

Through historical research, a researcher can learn and understand the background and growth of a chosen field of study or profession. It also gives insight into organisational culture, current trends as well as future possibilities. Historical research uses both qualitative and quantitative data collection methods. Historical research can be achieved through the use of several types of sources such as;

(i) **Historical Literature**- resources may include library books, special collections and museum collections.

(ii) **Archival Literature**- this is useful in the study of cultural processes over time and specific material is obtained from original documents.
(iii) **Oral Histories and Traditions**- Oral Histories involves gathering information from key informants who recall events, places and incidents while traditions are information and beliefs passed down through generations by word of mouth, socialisation or examples.

Historical research has its own strengths and weaknesses. Strengths include the provision of a comprehensive picture of historical trends, the use of existing information and provide evidence of on-going trends and problems. The weaknesses include but are not limited to, time consuming, information can be conflicting, materials can be difficult to access or locate, information may be incomplete obsolete, inaccurate or inconclusive.

### 3.4.4 Experiment

According to Saunders et al, (2003) an experiment involves coming up with a theoretical hypothesis and the allocation of samples to different experimental conditions and the control of other variables. Saunders et al, (2003) said there are advantages and disadvantages of this strategy. They said that experimental research has the advantage of making generalisation possible and that it is most useful in social science researches. The major disadvantage of experimental research according to Saunders et al (2003) is that it has a tendency of missing out some insights especially in situations that are complex.

Wegner, (2005) describes experimental research as a method whereby primary data is generated through the manipulation of variables under controlled conditions. Data on the variable of interest that is being studied can be monitored and recorded while the researcher makes conscious effort to control the other influencing variables.

### 3.5 CLASSIFICATION OF RESEARCH STRATEGY

#### 3.5.1 Time Horizons

According to Saunders et al, 2009 there are two types of time horizons a researcher can choose from, and these are cross-sectional and longitudinal studies. The cross
sectional time horizon is often referred to as a “snapshot” because the research is made at a particular point of time and lasts for a short period of time. They go on to say that this method is often used for research projects that have a time limit. The longitudinal time horizon is known as the “diary” perspective because it observes people or events over a long period of time. According to Saunders et al, 2009, the basic question that is answered by longitudinal studies is; “Has there been any change over a period of time?”

For this research the cross-sectional time horizon was used because of the restricted time limit as this was a research submitted in partial fulfilment of the requirements of the Graduate School of Management of the University of Zimbabwe.

3.5.2 Purpose of Research

(i) Explanatory

The explanatory/experimental research is designed to prove causation; that is, the researcher is confronted with ‘cause and effects problems’. Kervin (2005) defines experimentation as the research process in which one or more variables are manipulated under conditions which permit the collection of data which show the effects, if any, of such variables in unconfused fashion. Causal studies are designed to solve structured problems. Data collection is done by experimentation and under most circumstances, experiments must create artificial situations so that they can obtain the particular data needed and can measure the data accurately. This however is not directly applicable to this study due to the nature of the problem under study. The nature of this study require a cause-effect analysis as well as a descriptive analysis to make conclusions and recommendations on the link between human resources and material shortages and the quality of nurses and the overall pass rates.
(ii) Exploratory

This is appropriate when the research problem is badly understood or defined (Kervin, 2005). Exploratory research seeks to assist the researcher to have an insight of the problem that is, clarifying the nature of the problem. It also seeks to discover new relationships while conclusive research is designed to help executives choose among various possible courses of action (Boyd et. al, 1981). An exploratory research is designed to solve an unstructured problem. Data collection methods include the following:

- Search for secondary data
- Survey of knowledgeable persons
- Focus group discussions
- Case study

Exploratory research is qualitative in nature. In this study, the problem is structured, well understood and defined and requires a conclusive study hence an exploratory research is also applicable.

(iii) Experimental

In an experimental research strategy, the effects of manipulating one variable on another variable are measured. Typical features include selection of individuals from known populations; allocation of samples to different experimental conditions; introduction of planned change on one or more variables; measurement on small number of variables; control of other variables (Robson, 2009). This strategy usually involves hypothesis testing. However it is not applicable in this research because of its nature; several variables would need to be measured at the same time through the use of questionnaires.
iv) Descriptive

According to Ghauri and Grenhaung, (2002), descriptive studies are designed to describe something, for example, characteristics of users of a given product, the degree to which product use varies with income, age, sex and other characteristics. In a descriptive research the problem is structured and well understood. Data collection methods include the following:

(i) Observation;
(ii) Case study and
(iii) Survey study using personal interviews, telephone interviews and questionnaires

The key characteristics of this research design are structure and precise rules and procedures, for example if data is to be collected by the survey method, a detailed sampling plan must be made with regard to how many people and whom to interview; and how interviews shall be conducted. (Ghauri et. al, 2002). All interviews should be conducted in the same way so that variation in the data collection is as small as possible. Descriptive research is quantitative and conclusive. The descriptive research design is applicable to this study as this study is in part quantitative and seeks to make conclusive decisions and recommendations.

3.6 RESEARCH POPULATION

Fraenkel and Wallen, (2009) described a population as the group upon which the researcher is interested in making inferences. Also, the study results will be generalized on this group (the population). The population includes all individuals whom the researcher is interested in obtaining information and making inferences on. The authors divide the population into two categories, the target and the study populations.
Figure 3.1 below illustrates diagrammatically what population, sample and case are as well as how they relate to each other.

![Diagram of population, sample, and individual cases](image)

**Figure 3.1:** Population, sample and individual cases  
Source: Saunders, et al., 2009, p.211

The target population is the actual population to which the researcher wishes to generalise the research findings. However, due to various reasons, this population is not always readily available. Thus, the population to which the researcher is able to generalise is the study population (Saunders et. al, 1997). The study population is the collection of study units for which the values of the variables of interest could possibly be determined (Barzun and Graff, 1997). In survey literature, this corresponds directly to the sampling frame. The difference between the attributes of interest in the study population and the corresponding attributes in the target population is called the study error. This is a simple quantitative assessment for numerical attributes but can be challenging to define for graphical ones.
3.6.1 Target Population

The target population is the actual elements or individuals the researcher intends to choose his/her sample from and to generalise the research findings on. The total target population for this study is made up of 540 student nurses, 3 Principal Nursing Officers, 3 Principal Tutors from the three training hospital chosen for the research and 1 Director of The Nurses Council Of Zimbabwe as shown in the table below. The population was chosen because of its proximity to the researcher.

Table 3.1 shows the target population and the sample size that was involved in the this research.

### Table 3.2: Target population

<table>
<thead>
<tr>
<th>Target Group</th>
<th>Total Number in training</th>
<th>Number targeted for Questionnaire</th>
<th>Number targeted for Interview</th>
</tr>
</thead>
<tbody>
<tr>
<td>Third year student nurses</td>
<td>210</td>
<td>30</td>
<td>Nil</td>
</tr>
<tr>
<td>Second year student nurses</td>
<td>225</td>
<td>30</td>
<td>Nil</td>
</tr>
<tr>
<td>Newly qualified nurses</td>
<td>105</td>
<td>30</td>
<td>Nil</td>
</tr>
<tr>
<td>Principal Nursing Officers (PNO)</td>
<td>3</td>
<td>Nil</td>
<td>3</td>
</tr>
<tr>
<td>Principal Tutors (PT)</td>
<td>3</td>
<td>Nil</td>
<td>3</td>
</tr>
<tr>
<td>Nurses Council of Zimbabwe Director</td>
<td>1</td>
<td>Nil</td>
<td>1</td>
</tr>
</tbody>
</table>

Source: Researcher’ Own Construction

3.6.2 Sampling

According to Thompson, (2012) sampling involves the selection of some part of a population in order to estimate something about a whole population. Thompson believes that sampling is an important aspect of life in general and enquiry in particular. He contends that sampling is closely linked to external validity or generasability of the findings in a study, the extent to which what has been found in a particular situation at a particular time applies more generally to the whole population.
Ary, Jacobs and Razavieh, (2006) conceded that with all things being equal, representativeness of a population is more meaningful when the sample size is large enough. The authors were of the view that the most important attribute of a sample is its representativeness and not its size.

Fraenkel and Wallen, (2009) argued that there will always be some differences between the sample and the population. They then said if random sampling is used and the sample is of sufficient size, the differences are likely to be “relatively insignificant and incidental” (p. 103).

The idea of a ‘sample’ is linked to that of a ‘population’. Population refers to all the cases while a sample is a selection from the population.

3.6.2.1. Sample size and Justification

A sample of 90 respondents and 7 interviewees was drawn from the population. The researcher took the sample from the population using stratified and simple random techniques. In choosing the sample size due consideration was given to the aspects of time, cost and complexity of data to be collected. Thompson, (2012) says the sample size enables generalization of findings on the whole population in line with propositions. Stratified random sampling was used by simply categorising the total population into groups of student nurses by year of training, recently qualified nurses, principal nursing officers, and policy makers.

Stratified sampling was applied because of the heterogeneous characteristics of the population. Simple random sampling was then applied in the respective strata. For student nurses respondents were randomly selected from the departments they worked. This was made easier by the tutors in charge of students. The tutors would call students randomly from the departments to come to the classrooms where the researcher would address the as a group and explain the instructions to the respondents. Griffin and Hauser, (2008) state that a sample size of 30 respondents is acceptable as it provides a reasonable starting point. Saiful, (2010) is of the opinion that a sample size that ranges between 30 to 500 respondents is appropriate for most research. Wegner, (2005) states that "Sufficient" refers to a sample size large enough
for us to be reasonably confident that the stratum represents the population. Due to time constraints the researcher settled for distributing thirty questionnaires to each training school, i.e. ten questionnaires for each strata of student nurses.

3.6.2.2 Sampling Methods

Various types of sampling plans are divided into ones based on probability samples; (where the probability of selection of each respondent is known) and on non-probability samples; (where it is not known) (Walker, 2001). In probability sampling, statistical inferences about the population can be made from responses of the sample. In non-probability samples, it is not possible to make statistical inferences.

3.6.2.3 Non-probability sampling

Any sampling method in which the observations are not selected randomly is called non-probability sampling. Criteria other than randomness are the basis for selecting observations from the population (Wegner, 1993). It is erroneous to apply inferential statistical methods to data gathered via non-probability sampling method as the sampling error cannot be statistically determined.

There are three main types of non-probability sampling procedures, namely; convenience sampling, judgment sampling and quota sampling.

(i) **Convenience sampling** is used in exploratory research where the researcher is interested in getting an inexpensive approximation of the truth. Therefore, the sample is selected because they are convenient (Kratchwill, 1999). This non-probability method is often used during preliminary research efforts to get a gross estimate of the results, without incurring the cost or time required to select a random sample.
(ii) **Judgment sampling** is a common non-probability method in which the researcher selects the sample based on judgment. For example, a researcher may decide to draw the entire sample from one "representative" city, even though the population includes all cities. Burgess (1992) warns that when using this method, the researcher must be confident that the chosen sample is truly representative of the entire population.

(iii) **Quota sampling** is the non-probability method which is equivalent to stratified sampling. As in stratified sampling, the researcher first identifies the strata and their proportions as they are represented in the population. Then, convenience or judgment sampling is used to select the required number of subjects from each stratum (Cohen and Manion, 1999).

(iv) **Snow ball** sampling is a version of judgmental sampling where there is need to reach a small specialized population of people who have specific knowledge or skills in new technology or management skills (Saunders et al, 2003).

(v) **Self-selection** sampling occurs when researcher allows individuals to volunteer their desire to take part in the research (Patton, 2000).

### 3.6.2.4. Probability sampling

Probability sampling includes all selection methods where the observations to be included in a sample have been selected on a purely random basis from the population (Cohen and Manion, 1999). In this study, probability sampling was chosen because; it allowed the researcher to measure sampling errors, establish the representative nature of the population and inferential statistical methods could be validly applied to data collected from a probability sample (Wegner, 1993).

The four main methods of randomly selecting observations are; simple random sampling, systematic sampling, stratified sampling and cluster sampling.
(i) **Simple random sampling** is the purest form of probability sampling. This method involves selection at random from a list of the population of the required number of units from the sample (Merrian and Simpson, 2000). Random number of tables or a computer can be used for the random selection of units. According to Merrian and Simpson, (2000) each member of the population has an equal and known chance of being selected.

(ii) **Systematic sampling** is often used instead of random sampling. It is also called an \( n^{th} \) name selection technique. After the required sample size has been calculated, every \( n^{th} \) record is selected from a list of population members (Barzun and Graff, 1997). As long as the list does not contain any hidden order, this sampling method is as good as the random sampling method. Its only advantage over the random sampling technique is simplicity.

(iii) **Stratified Random Sampling** is a commonly used probability method that is superior to random sampling because it reduces sampling error. Wegner (2005) defines a stratum as a subset of a population that shares at least one common characteristic. The researcher first identifies the relevant strata and their actual representation in the population. Random sampling is then used to select a sufficient number of subjects from each stratum. "Sufficient" refers to a sample size large enough for us to be reasonably confident that the stratum represents the population.

(iv) **Cluster Sampling**: The population is divided into groups, or clusters and a random sample of clusters gets selected. Cluster sampling is used when there is considerable variation within each group but the groups are essentially similar to each other (Keogh, 1999). Because this study focused on fairly straightforward groups, it was felt that this method would not be the most ideal for the study.
3.7 RESEARCH INSTRUMENTS AND DATA COLLECTION PROCEDURE

These are tools used to collect data. Research instruments must be reliable and must be valid measures of what the researcher seeks to measure. The instruments depend on the research design. A combination of both a questionnaire and interview guide were used in this research and data was derived from responses obtained from the questions.

3.7.1 Questionnaires

Kervin (2005) defines a questionnaire as a data collection instrument used in survey research where people answer questions by recording their own answers. Bell (1999) and Zikmund (2008) widened the definition to include face-to-face or telephonic interviews.

Fraenkel and Wallen (2006) say the major advantage of using the questionnaire, is that it can be administered to large numbers of people at the same time. This method has also proved to be cost effective and convenient in collecting data. Foddy (1994) and de Vaus (2002) give the major disadvantages of using a questionnaire as a research instrument. First, they argued that response rate is often low, mainly because potential respondents usually fail to complete and return the questionnaires. Secondly, it is often difficult to control who completes the questionnaire as these can be completed at home or workplace while the researcher is not present. Thirdly, the other main disadvantage is, respondents might find it difficult to answer certain questions in the absence of the researcher who might not be available to explain, clarify or give assistance if it is required.

Casell and Symons (1994) say that there are two broad data collection methods namely primary data and secondary data. Primary data is derived from the use of research strategies such as personal and telephone interviews, observation and questionnaires. Secondary data is information that has been derived or synthesized from primary data that may not have been specifically gathered for the purpose of the
research at hand (Malhotra, Hall, Shaw and Oppenheim, 2002). In this research both primary and secondary data was used. Primary data collection for this study was done through the use of a questionnaire and interview guides. An introductory letter that indicated major areas of research, purpose of the research and commitment to confidentiality and anonymity was sent to all interviewees and questionnaire respondents. All this was done to allow freedom of expression from respondents. The questionnaire was structured in such a way that it was able to collect both quantitative and qualitative data. It therefore consisted both structured and open ended questions.

A total of 90 questionnaires were delivered by hand to the principal tutors to be given to respondents. The tutors were very helpful, the researcher was given dates to come and meet the students, who were called to the classrooms and questionnaires were answered the same day. For the qualified nurses it was different as these were found in different departments at different times. Their questionnaires were left with them and were completed at their own pace. This category of respondents was given a period of three days to complete the questionnaires and the researcher went back to collect the questionnaires. At Chitungwiza and Parirenyatwa hospitals, the researcher got a 100% response rate, but at Bindura hospital one qualified nurse went off duty without returning the questionnaire and it was difficult to get a replacement as the other elements of the same strata were either away on leave or on off duty.

3.7.2 Interviews

An interview is a formal exchange of words between two or more individuals over a common topic of interest. There is an interviewer who asks questions and an interviewee or respondent who responds to the questions being asked (Fraenkel and Wallen, 2006). Kvale, (1996) said that the main objective of for conducting interviews is to be understand the meaning of what the interviewee is saying. He goes on to explain further that in qualitative research, the interviewer seeks to cover both a factual and a meaning level of a situation. Kvale, (1996) says interviews give an opportunity to the interviewer to probe or ask follow-up questions. The major challenge of this form of tool is that it is time consuming as well as resource intensive. The interview can be
conducted either by telephone or face-to-face. The researcher used the face to face method as all the interviewees were easily accessible. The researcher interviewed all the three PNOs, PTs of the three training hospitals and the Director of the Zimbabwe Nurses Council but failed to interview the Deputy Director Nursing Services responsible nurses training programmes at MoHCW head office.

Valanuela and Shivastava, (2010) described three types of interview guides;

(i) Informal Conversational, General Interview Guide; This does not have predetermined questions, its aim is to ensure that the same general information is collected from different individuals. It must be noted that it must allow for a degree of freedom and adaptability when getting the information from the interviewee.

(ii) Standard Open ended Interview Guide; This type of approach is comprised of open ended questions which are asked to all interviewees. This type of approach aids faster interviews. This is the type of interview guide adopted by the researcher for the training hospitals.

(iii) Closed, Fixed Response Interview Guide; This is comprised of the same questions with fixed responses which the respondent is asked to choose from.

According to Fraenkel and Wallen, (2006) there are some disadvantages of this technique, it poses the challenge to the interviewer of the capability to cultivate a neutral attitude towards the respondent and his/her own feelings, opinions and judgements to oneself.

In this research, type (ii) and (iii) approaches were used by the researcher.

3.8 DATA ANALYSIS AND PRESENTATION

After data collection, the data was cleaned, thus making sure that all irrelevant data was discarded. The data was then coded before the process of data entry was carried out using Epi-info version 3.3; a statistical package that is considered good for data
entry. Data analysis was done using the Statistical Package for Social Scientists (SPSS version 12) and Microsoft Office Excel 2007 was used because of its presentation of neat and good looking graphs and charts.

According to Zigmund, (2003) data processing can only be done after data has been edited and coded. The researcher followed this approach by editing the questionnaires for possible discrepancies and then all the questions were coded in preparation for entry into the SPSS programme.

The data were displayed by way of graphs, charts and tables followed by brief discussions of the findings. The report was compiled in Microsoft Office 2007, joining all the chapters to come up with one comprehensive document.

3.9 LIMITATIONS

The research used respondents from only three training institutions due to resource and time limitations. Some information was considered private and confidential making it very difficult to collect accurate data.

The respondents from the newly qualified nurse stratum who qualified in the period under review; (January 2009 to December 2012), were difficult to access because most of them are not yet employed in public hospitals as they were affected by the “freezeing” of posts in all government departments by the Minister of Finance. Securing an appointment with the policy makers at head office proved futile as they were always busy or not in their offices.

3.10 CHAPTER SUMMARY

The chapter gave an outline of how the research was conducted in terms of the research design, data collection methods and analysis procedures. The research adopted a combination of both qualitative and quantitative research philosophy with data collected through a questionnaire which was administered to student nurses and newly qualified nurses, and interview guides that were administered to key personnel in
the training institutions and at the Nurses Council of Zimbabwe. The next chapter looks at the findings and discussion of the results.
CHAPTER FOUR
RESEARCH FINDINGS AND DISCUSSIONS

4.0 INTRODUCTION

The chapter presents the research findings and discussions. The findings are presented in the form of graphs and tables. Authors views cited in the literature are used to discuss the findings. The chapter consists of the response rate, demographic information and the findings on each of the research questions cited in chapter one.

4.1 RESPONSE RATE

A response rate is actual number, (expressed as a percentage), of selected people, , in a research who answer and return their questionnaires and their responses are used for data analysis (Anonymous 2012).

Saunders et al (2003) suggest that a response rate of 50% and above is considered to be a good rate that is reliable and valid to be inferred to the general population under study.

A total of 90 questionnaires were distributed to the following groups of nurses; newly qualified nurses, second and third year student nurses from Parirenyatwa, Bindura and Chitungwiza hospitals. The research had a very good response rate of 95.56% which warrants the validity and reliability of the research findings. Table 4.1 gives a detailed account of the response rate.
Table 4.1 Questionnaire Distribution and Response Rates.

<table>
<thead>
<tr>
<th>Category</th>
<th>Parirenyatwa</th>
<th>Bindura</th>
<th>Chitungwiza</th>
<th>Total Sent</th>
<th>Total Returned</th>
</tr>
</thead>
<tbody>
<tr>
<td>Newly Qualified nurses</td>
<td>Sent Returned</td>
<td>Sent Returned</td>
<td>Sent Returned</td>
<td>Sent Returned</td>
<td>Sent Returned</td>
</tr>
<tr>
<td>10 10</td>
<td>10 6</td>
<td>10 10</td>
<td>10 10</td>
<td>30 26</td>
<td></td>
</tr>
<tr>
<td>Second year students</td>
<td>10 10</td>
<td>10 10</td>
<td>10 10</td>
<td>30 30</td>
<td></td>
</tr>
<tr>
<td>Third year students</td>
<td>10 10</td>
<td>10 10</td>
<td>10 10</td>
<td>30 30</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>30 30</td>
<td>30 26</td>
<td>30 30</td>
<td>90 86</td>
<td></td>
</tr>
<tr>
<td>Response Rates</td>
<td>100%</td>
<td>86.67%</td>
<td>100%</td>
<td>95.56%</td>
<td></td>
</tr>
</tbody>
</table>

4.3 DEMOGRAPHIC RESPONSES
This section sought to find out the sex, positions and age of the respondents

4.3.1 Sex of respondents

Figure 4.1: Gender of the respondents
Figure 4.1 indicates that 74% of the respondents were female while 26% were male. The majority of the respondents were female. This means that nursing profession usually is undertaken by women.

4.3.2 Age of Respondents
Figure 4.3 demonstrates the age of the respondents.

![Age Distribution Bar Chart]

Figure 4.2: Age of the respondents

Figure 4.2 indicates that 24.42% have 21-25 years, 38.37% have 26-29 years, 24.42% have 30-34 years, 11.63% have 35 years and above while 1.16% have less than 20 years. The training nurses are mature enough since the majority are above 25 Years of age to train in the nursing profession.
4.4 AVAILABILITY OF HUMAN AND MATERIAL RESOURCES DURING STUDENT NURSES TRAINING.

4.4.1. Supervision of Procedures on Newly Qualified members of staff
Respondents were asked if they had qualified members of staff to supervise them on procedures that they were not confident or not allowed to perform on their own. Figure 4.3 demonstrates the results.

![Figure 4.3: Supervision of procedures on student nurses during training](image)

<table>
<thead>
<tr>
<th>Procedure</th>
<th>Yes</th>
<th>No</th>
<th>Not always</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dressing wounds</td>
<td>24.7%</td>
<td>17%</td>
<td>59.3%</td>
</tr>
<tr>
<td>Drug round</td>
<td>17%</td>
<td>19%</td>
<td>64%</td>
</tr>
<tr>
<td>Blood transfusion</td>
<td>29%</td>
<td>14%</td>
<td>57%</td>
</tr>
<tr>
<td>Removal of sutures</td>
<td>23.3%</td>
<td>33.7%</td>
<td>43.00%</td>
</tr>
</tbody>
</table>

Figure 4.3 indicates that 24.7% of the respondents said that they have qualified staff in dressing wounds, 17% said no while 59.3% said not always.

About 17% suggested that they have qualified staff in drug round, 19% said no while 64% said not always.

Figure 4.3 also indicates that 29% of the respondents suggested that they have qualified staff in dressing in blood transfusion, 14% said no while 57% said not always.
Figure 4.3 shows that 23.3% suggested that they have qualified staff in removal of sutures while 43% said not always and 33.7% said no.

Findings in figure 4.3 indicate the majority of the respondents reported that they do not always have qualified staff in when performing most procedures. According to the training regulations there are some procedures which a student nurse is not allowed to perform without supervision from a qualified nurse and yet in all the above procedures the majority reported not having supervision all the time. This denotes shortage of qualified personnel. This is in line with Agbenten (1985) who reported that it is a global challenge being experienced the world over but more critically in developing countries where brain and skills drain have been highlighted in chapter two. In support of this statement, Udofort (1994) raised the point that inadequate teachers in the fields of science and technology have forced some organizations to employ semi-skilled employees. According to Udofort, (1994) the supervision of students by unqualified people demotivates them.

Aina (2000) states that the quality and quantity of teachers in the training centers have contributed immensely to high failure rates being experienced.

**4.4.2 conditions requiring specialists doctors**

Respondents were asked if they have been trained in the courses indicated in figure 4.3 during their training.
Figure 4.4: Conditions requiring specialists services

Figure 4.5: Conditions requiring specialists services (continued)
Figure 4.4 indicates that only 5% of the respondents have had hands on training caring for a patient following total hip replacement. For only 10% reported having nursed a patient who had undergone surgery of the head (craniotomy). A high number of students reported having nursed patients following removal of the appendix (appendicectomy). This is attributable to the fact that appendicectomy is an operation that can be performed by junior doctors. Figure 4.5 also indicates that the majority of students have not nursed patients who had undergone major operations such as thoracotomy, cholecystectomy and total hip replacement as these can only be performed by specialist doctors who have been shown to be inadequate in table 4.2. This impacts on skills acquisition as nursing is a vocational training that requires hands-on experience on the job in order to acquire the necessary skills. As highlighted by Andreyka, (1996), for educational programmes to be successful there is need for qualified and experienced personnel to train students. In other words, it is of paramount importance that nurse trainers be trained in terms of sufficient quality and quantity. This is supported by Bereday as cited in Oladebo (1987), who said that the effectiveness of any training programme largely depends on the quality of its trainers.
4.4.3 Material resources

The research also investigated if the respondents had used the various types of medical equipment in figures 4.6 & 4.7 during their training.

![Figure 4.6: Use of various medical equipment.](image)

Figures 4.6 and 4.7 have shown that training hospitals do not have some basic equipment that is needed to treat patients. For example, a Thomas Splint is gadget a that is required to immobilize a patient who has had fractures of the lower limb bones like the femur. For hospitals like Bindura where it was reported that there are no orthopaedic doctors (specialist doctors for bone injuries or diseases), the researcher failed to understand how patients get transferred to higher levels of care without these gadgets in place. Students are expected to learn how to read x-rays and yet only 20% have reported using an x-ray view mirror. The researcher managed to establish that most hospitals do not have most of these gadgets or where they are available the gadgets are obsolete. This left the researcher wondering how the newly qualified nurses were mentoring other students when some of them did not have the opportunity to learn how to use the equipment.
Figure 4.7: Use of various medical equipment (continued)

Figure 4.8: Use of computers during training.
Figure 4.8 shows that only 29% of the students at Parirenyatwa hospital alone had used a computer during training. The interviews with the nursing officers and principal tutors established that there were no computer studies for students as all the hospitals reported that computers were not part of the curriculum. The researcher was not able to verify with the few students, who reported using computer, how and where they had done so.

The machines that the majority of students reported to have used are the suction machines, phototherapy machines, X-ray view mirrors, Zimmer frame and ventilators. The findings indicate that material resources in these hospitals are either not available, not being used or obsolete. Literature has shown that vocational training such as the nurses’ training require material resources in adequate numbers in order for nurse trainers to function efficiently and effectively.

Research went on to ask respondents if they have adequate resources to perform the tasks indicated in figure 4.6. Figure 4.6 shows the results.
Figure 4.5 shows that 16% said yes, 52% have adequate resources in dressing wounds while 48% have not, 76% have resources for damp dusting while 34% have not, 53% have adequate resources for barrier nursing while 47% have not, 48% have adequate resources for nursing of severe burns while 52% have not, 24% have adequate resources for cardiopulmonary resuscitation while 76% have not. About 33% have adequate resources for doctors rounds while 67% have not, 5% have adequate machines for closed methods for burns while 95% have not.

The findings in figure 4.9 indicate that a number of procedures are carried out without adequate resources which implies that the students did not acquire the correct skills and they might still need to be supervised when these resources become available before they can be proclaimed competent. Bans (2007) advocated for the need to
continually upgrade training facilities as well as the employees especially in the advent of fast changing technology. The results lead to a lot of unanswered questions which need to be further investigated on. The researcher had intended to find out if the newly qualified nurses had gone for any developmental programmes since qualifying but some of the respondents did answer that section as a result it was not evaluated.

4.4.4 Knowledge of specialised procedures and conditions
Respondents were asked if they have nursed or assisted conditions or procedures such as drain shortening, lumbar puncture, under water seal drain, care of the tracheostomy, cardio-pulmonary resuscitation, and skeletal traction.

![Knowledge of Specialised Procedures or Conditions](image)

**Figure 4.10: Knowledge of Specialised Procedures or Conditions**

Figure 4.10 shows that 32% have assisted drain shortening, while 68% have not, 54% have assisted lumbar punctures while 46% have not, 77% have nursed patients with
under water seal drain while 33% have not, 75% have taken care of a tracheostomy while 25% have not, 36% participated in cardiopulmonary resuscitation while 64% have not. About 70% have looked after a patient on a skeletal attraction. The research findings reveal that students have not acquired a lot of skills in several condition or procedures. The reason for not having nursed or participated in some common procedures such as cardiopulmonary resuscitation and lumber punctures are not fully explained for as these conditions occur quite frequently. The media reports a lot of road traffic accidents which result in severe injuries that require resuscitation and or skeletal tractions. According to the Principal Nursing Officer at Bindura hospital, there are no specialist doctors to perform major operations as a result all their students are seconded to either Parirenyatwa or Harare Central hospitals for exposure to conditions and departments that are not available there.

Fajemirokan (1999) suggested that some of the equipment is either insufficient or obsolete. According to Odusanya, (1999) less competent nurses after completing training is attributed to lack of or insufficient material resources.

4.4.5 Perception of nurses on Receiving Adequate training in different Nursing Faculties.

The research sought to find out if nurses felt they had received adequate training in all the faculties of nursing. The questionnaire had a section with likert scale responses. Figure 4.11 and figure 4.12 show the results.
Figures 4.11 and 4.12 show that the students disagreed to having received adequate training in most faculties. The only areas which most students seem to agree to having received adequate training are the Paediatric unit, community Nursing and Medical department. Bindura Hospital is said not to have many departments, for example there is no Intensive Care Unit, Psychiatric unit, and stand alone surgical units. According to PNO all students go on Community attachment in the rural and urban clinics. In chapter two it was noted that there reports that indicated that some of the lower level facilities are manned by unqualified personnel. This was a point of interest to the researcher to further evaluate how the students acquire skills in such set-ups hence the recommendations in chapter five.

Tanner and Tanner, (2002) in previous chapters noted that the success of any training programme highly depends on the quality of teachers providing the training. The research results have shown that all the training schools do not have adequate human resources. The student mentor ratios are very high making it difficult for the trainers to accord student sufficient supervision and support.
4.5 Results from the interviews

Table 4.2 shows the interview results on staff establishments for the three training hospitals. The table shows that all the three hospitals have shortages for the various categories of staff. Share, (2012) reported that a lot of government institutions are finding it difficult to operate at full capacity due to staff shortages that were created as a result of the Minister of Finance’s directive to “freeze” all vacant posts.
Table 4.2 Staff establishments for the three Hospitals.

<table>
<thead>
<tr>
<th>Category of Staff</th>
<th>Parirenyatwa Hospital</th>
<th>Chitungwiza Hospital</th>
<th>Bindura Hospital</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>In Post</td>
<td>Vacant or Deficit</td>
<td>In Post</td>
</tr>
<tr>
<td>Nurses Total</td>
<td>916</td>
<td>250</td>
<td>820</td>
</tr>
<tr>
<td>Senior Nurses</td>
<td>365</td>
<td>250</td>
<td>215</td>
</tr>
<tr>
<td>Newly Qualified Nurses</td>
<td>54</td>
<td>N/A</td>
<td>32</td>
</tr>
<tr>
<td>Doctors</td>
<td>110</td>
<td>90</td>
<td>48</td>
</tr>
<tr>
<td>Specialist Doctors</td>
<td>14</td>
<td>10</td>
<td>6</td>
</tr>
<tr>
<td>Nurse Educators</td>
<td>12</td>
<td>8</td>
<td>8</td>
</tr>
<tr>
<td>Clinical Instructors</td>
<td>16</td>
<td>9</td>
<td>12</td>
</tr>
<tr>
<td>Clinical Officers</td>
<td>0</td>
<td>6</td>
<td>2</td>
</tr>
<tr>
<td>Student /Mentor Ratios</td>
<td>Current</td>
<td>1:10</td>
<td>Ideal</td>
</tr>
</tbody>
</table>

Parirenyatwa hospital has the highest number of specialist doctors but the PNO highlighted in the interview that these were still not adequate. Chitungwiza hospital, also, a central Hospital just like Parirenyatwa, only has 6 specialist doctors while Bindura, a Provincial hospital at the same time a referral centre, does not even have a single specialist doctor. The student –mentor ratio at Parirenyatwa is better than the other two hospitals because there are more departments to spread the students to. All hospitals indicated that they would want the student-mentor ratio improved.

Grimshaw and Rubery, (2007) pointed out that capability of training institutions in most developing countries is still not sufficient. They gave examples of countries such as Ethiopia, which has a population of 75 million and it trains just plus or minus 200 doctors annually while a country like the UK with a population of 60 million is capable of training over 6 000 doctors annually. Besides the inability to train adequate numbers
in developing countries, literature has shown that there are other confounding variables that impact negatively on the already limited human resources. Such factors as poor working conditions and environments, poor remuneration packages and the impact of the HIV/AIDS pandemic on health workers all contribute to decreasing the capability of training institutions in developing countries.

4.5.1 Material resources

Interviews were carried out with the PNOs from Chitungwiza, Bindura and Parirenyatwa Hospitals. They were asked if they have enough material resources. All the PNOs highlighted the presence of material resource shortages. Specialist doctors fail to perform some major operations due to the shortage of these resources. At Bindura hospital the departments and wards are too few to accommodate all students. In a study done in several developing countries by Towe, (2007) it was noted that learning environments for most training schools were not favourable for training. The study showed that most materials required for training were not working and as a result students only got theoretical input without the corresponding practical experience.

4.7 INTERVIEWS WITH POLICY MAKERS

The interview was done with one of the policy makers at the Nurses Council of Zimbabwe. The interviewee was asked on the challenges that faced the nurses’ training programmes in Zimbabwe. She felt that the MoHCW’s policies and regulations are not flexible to allow the training institutions to be innovative or come with their own strategies to suit each institution’s set-up. The Director stated that the training programmes lack adequate funding and which is one of the major challenges that is leading to inability to refurbish schools with modern teaching equipment. She also highlighted the absence of computer training in the programmes. The director agreed that there is a decline in the standards of training as the ministry was focusing on quantity and ignoring quality.
The Director feels that concentrating on producing high quantities without improving on human and material resource shortages will not help resolve the current situation. She commented to say, if the MoHCW fails to address issues of remuneration, risk allowances, worker incentives, and staff development opportunities the shortage of human resources will be a permanent feature in all government run institutions.

4.6: CHAPTER SUMMARY

This chapter discussed the research findings in relation to literature review in order to answer the objectives cited in chapter one. The major findings revealed by the study were there were shortages of human and material resources in all the three training institutions. Shortage of specialist doctors to perform major operations has resulted in many students either qualifying or proceeding to the next level of training without nursing or witnessing quite a number of condition and procedures. Students have indicated that they at times carry out procedures that they are not yet competent to do on their without being supervised by a qualified person. Students expressed opinions that they did not receive adequate training in a number of nursing faculties. The student mentor ratios in all the three hospitals are above the ideal of 1:4. It suggests that students are not getting maximum attention during practical sessions.

The next chapter presents the research conclusions and recommendations.
CHAPTER FIVE
CONCLUSIONS AND RECOMMENDATIONS

5.0 INTRODUCTION
This chapter presents the research conclusions and recommendations. The conclusions and the recommendations were made from the findings. An area of further study is also provided in this chapter.

4.1 CONCLUSIONS
The following conclusions were arrived at;

5.2.1 What Is The Effect of Material and Human Resources Shortages on Both Pass Rates And Competency Levels of Student Nurses and Newly Qualified Nurses?

The research concluded that there is a serious shortage of the qualified training personnel. The expected mentor-student ratio is 1:4 but on ground the average ratio is 1:10. Students are being trained by non-qualified staff. Students are left to carry out procedures they are not yet competent to do because the qualified nurses who are supposed to do so are scarce and busy with other responsibilities. The findings also revealed that students feel that they are not fully trained in all the courses they are expected of. The absence of specialists who perform major operations in the government institutions has resulted in the majority of nurses qualifying before they had a chance to have hands on experience to nurse certain conditions. The available doctors are mostly junior doctors who do not have the capacity to perform these specialist services and hence the inability to teach the nurses during training.

The research also found that the training institutions do not have adequate material resources to allow effective training of students. Students are trained without some key machines and equipment such as defibrillators, ECG machines, and computers. In
a normal situation every trainee is expected to have used or familiarised with these machines, but majority of student nurses indicated otherwise. The available machines, if available are now obsolete or not functioning. Most student nurses completed training without experiencing how a Deep X-ray Therapy (DXT) machine that is used to treat cancer patients works, as the only DXT machine at Parirenyatwa stopped functioning some six months ago. This is the only one in the whole country. Out of interest the researcher visited a lot of departments at the hospitals and the reports that were coming from the staff were that most of the equipment is dilapidated and there is need to invest in new technology and state of the art equipment. The shortage of teaching materials results in increasing the work burden for the understaffed teachers and the probability of fatigue and burnout becomes high.

From the interviews, literature from the media, and observation the research also established that the departments and wards are usually overcrowded with patients sleeping on the floors. At Bindura hospital, for example, there are too few departments to accommodate all students. There are only four wards and four departments where student nurses can be assigned to, as a result one ward can have too many students with only two qualified nurses to supervise them. According to one Registered nurse at Bindura hospital, “this makes supervision and follow-up of students by the trained nurses very difficult and increases the chance of truancy by the students”

5.2.2 To Examine The Extent to Which Government Policies are Responsive to Changes in The Socio-Economic Environment and The Dynamics in The Health Sector With Particular Reference to Nurse Training Programmes.

The research concludes that the government does not allow the training institutions to be innovative enough to come up with strategies to improve the quality of the training for student nurses in Zimbabwe. The training institutions are owned by the government and the government gives directives on how the institutions are run and yet it could be the institutions doing that not vice-versa.

Government funding for health programmes, inclusive of the nurses training programmes, is not sufficient enough to curb the shortage of human and material
resources. The lack of adequate funding in the training programmes has been attributed to a lot of challenges that have seen nurses qualifying without receiving comprehensive experience in all the faculties of medicine as shown in figures 4.7 and 4.8.

The controlling body, the Nurses Council of Zimbabwe does not make any recommendations to the training institutions. Such restrictions affect the ability of management at the ground to make decisions on things like; how many students to enroll per intake; to skip certain intakes due to shortage of manpower at any given time. The controlling body keeps record of all the qualified nurses in the country. It would be meaningful if the controlling body was allowed to give yearly statistics of how many nurses are employed and how many are on the job market so that training institutions are adjust accordingly rather than train nurses who sit at home because the hospitals do not have vacancies. The government’s policies are not flexible to allow the controlling body to change the admission criteria in response to international trends, to suspend centers that are not suitable to train higher level diploma courses like the RGN programme, and to develop syllabi to suit disease patterns, socio-economic environment and dynamics in the health sector.

5.2.3 To Determine Ways That Can Be Employed To Overcome Human And Material Shortages In Nurses’ Training Programmes

The research established through literature review and interviews that the push and pull factors are a major source of the underlying factors to the challenges of human and material resource shortages in the nurses training programmes in Zimbabwe. The policy makers in the controlling body for the nurses felt that the policies and regulations need to be flexible in order to adapt to prevailing conditions in the socio-economic environment.

Literature showed that shortage of human resources can also be reduced by attracting back qualified and experienced staff back from the diaspora, private and NGO sectors.
4.2 RECOMMENDATIONS

The research provides the following recommendations;

1. **Invest more in ICT**
   
   In order to improve on the quality of nurses training programmes, the MoHCW should increase funding for the training institutions and thereby invest more in Information Communication Technology (ICT). Students who are being trained should be able to use modern technology as the world has become highly technical. Enhancing ICT infrastructure helps the programme improve the teaching resources and methods thereby impacting positively on the quality of training accorded to nurses in Zimbabwe.

2. **Reward Nurse Educators More**
   
   The research also recommends that the personnel responsible for training nurses must be highly rewarded so as to motivate and retain them since the majority are reported to be leaving the country for greener pastures. For all the three hospitals studied, the study revealed that there are no adequate specialist doctors who perform major operations which the students are expected to nurse during the course of training in order to acquire skills. This can probably be reduced if the MoHCW could offer highly competitive salaries and benefits in order to retain them and also to lure other doctor from outside the country. Senior nurses who remain in the profession should be given incentives and remuneration commensurate with the years of experience.

3. **Decentralise Strategic Management**
   
   The study recommends that the MoHCW need to have more flexible policies that allow lower level management to carry out their own strategic planning and adjust enrolments, buy equipment or employ personnel that correspond to disease patterns, workload and disasters. Institutions should be allowed to defer enrolments if they encounter high staff turnover ratios.
4. **Introduce internship for newly qualified nurses**

The newly qualified nurses should continue on a form training like the housemanship programme for junior doctors. Certification should only be given when it has been proven that competency levels are at acceptable levels.

4.3 **AREA OF FURTHER STUDY**

An area of further study is recommended to investigate the effectiveness of the nursing training strategies in Zimbabwe. Another area of study recommended would be that of investigating student attitudes towards learning as this research failed to ascertain whether the students did not experience all the procedures and conditions asked in the study due to poor attitudes or lack of resources.
REFERENCES


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74. Mertens, B. (2008), Case Study Research Methods, Continuum, New York, USA.
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84. Mutowo, M. (2011) Lecture notes MBA, University of Zimbabwe Graduate School of Management.


Appendix 1: Questionnaire Cover letter

No. 41 Lorraine Drive,
Bluffhill, Westgate,
Harare.
1st February, 2013

Dear Respondent,

RE: ACADEMIC RESEARCH QUESTIONNAIRE

My name is Juliet Mufuka, I am a final year Master of Business Administration (MBA) student at the Graduate School of Management, University of Zimbabwe. I am carrying out a research on the impact of human and material resource shortages on the nurse training programmes in Zimbabwe; A case of the three year RGN diploma at three hospital; (Parirenyatwa & Chitungwiza Central Hospitals and Bindura Provincial Hospital); Period: January 2009 to December 2012.

The main aim of the study is to explore the challenges of training student nurses in an environment of severe shortages of material and human resources.

I therefore kindly request you to spare a few minutes of your time to fill in the attached questionnaire which is part of the research. Please note that the responses will be used for academic purposes only and the responses will be handled with utmost confidentiality.

Please feel free to contact the researcher on 0772 546 7544 or email address at jmufuka10@gmail.com

Your truthful submissions and cooperation is vital for the results of the study to be valid and reliable.

Thank you in advance for your time and assistance.

_____________
Juliet Mufuka.
Appendix 2: RESEARCH QUESTIONNAIRE

Instructions:
• To Be Answered By Second & Third Year Student Nurses and Newly Qualified Nurses (i.e. those who qualified from Jan 2009 to Dec 2012).
• Second year student nurses use N/A for sections requiring 3rd year student information.
• Do not write your names on the questionnaires, only write the name of the institution.
• All information will be treated as strictly private and confidential.
• Participation is voluntary, you have the right to decline to answer this questionnaire.

SECTION A

Demographic Information.

1. Name of Institution............................................................

2. Gender (Please tick the appropriate box )

<table>
<thead>
<tr>
<th>Gender</th>
<th>Tick</th>
</tr>
</thead>
<tbody>
<tr>
<td>Female</td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td></td>
</tr>
</tbody>
</table>

3. Age (Please tick the appropriate box)

<table>
<thead>
<tr>
<th>Age</th>
<th>Tick</th>
</tr>
</thead>
<tbody>
<tr>
<td>Less than 20 years</td>
<td></td>
</tr>
<tr>
<td>21-25 years</td>
<td></td>
</tr>
<tr>
<td>26-29 years</td>
<td></td>
</tr>
<tr>
<td>30-34</td>
<td></td>
</tr>
<tr>
<td>35 and Above</td>
<td></td>
</tr>
</tbody>
</table>
4. Position (Please tick the appropriate box)

<table>
<thead>
<tr>
<th>Position</th>
<th>Tick</th>
</tr>
</thead>
<tbody>
<tr>
<td>Newly Qualified Nurse</td>
<td></td>
</tr>
<tr>
<td>Second Year Student</td>
<td></td>
</tr>
<tr>
<td>Third Year Student</td>
<td></td>
</tr>
</tbody>
</table>

Section B

Objective: To establish the effect of human and material resource shortages on both pass rates and competency levels of student nurses and newly qualified nurses.

Human Resource Related Information.
5. How many tutors taught you during the following years of training?
(Second year students put N/A for last row)

<table>
<thead>
<tr>
<th>Period of Training</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>First Year</td>
<td></td>
</tr>
<tr>
<td>Second Year</td>
<td></td>
</tr>
<tr>
<td>Third Year</td>
<td></td>
</tr>
</tbody>
</table>

6. During your attachments in the wards/departments do you/ did you always have a qualified member of staff to supervise you on procedures that you were not confident of performing on your own? (Tick in appropriate box)

<table>
<thead>
<tr>
<th>Procedure</th>
<th>Yes</th>
<th>No</th>
<th>Not Always</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dressing of wounds</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Drug Round</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Blood Transfusion</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Wound Suturing</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Removal of Drains</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Removal of Sutures</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
7. Conditions requiring specialist services;
Have you nursed the following conditions during your training? (Please tick the appropriate box)

<table>
<thead>
<tr>
<th>Condition</th>
<th>Yes</th>
<th>No</th>
<th>Not Sure</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Hip Replacement</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Craniotomy</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total Abdominal Hysterectomy</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Appendicectomy</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Thoracotomy</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cholecystectomy</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Chemotherapy</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Material Resource Related Information:

8. Have you used the following Equipment. (Tick in the appropriate box)

<table>
<thead>
<tr>
<th>Type of Equipment</th>
<th>Yes</th>
<th>No</th>
<th>Not Sure</th>
</tr>
</thead>
<tbody>
<tr>
<td>Defibrillator</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ECG Machine</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Suction Machine</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Phototherapy Machine</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>X-ray View Mirrors</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Zimmer Frame</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Thomas Splint</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ventilator</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Computer during training</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
9. Do you have adequate resources to perform the following Procedures?

<table>
<thead>
<tr>
<th>Procedure</th>
<th>Tick Appropriate Box</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>YES</td>
</tr>
<tr>
<td>Drug Round</td>
<td></td>
</tr>
<tr>
<td>Dressing of Wounds</td>
<td></td>
</tr>
<tr>
<td>Damp Dusting</td>
<td></td>
</tr>
<tr>
<td>Barrier Nursing</td>
<td></td>
</tr>
<tr>
<td>Nursing of Severe Burns</td>
<td></td>
</tr>
<tr>
<td>Cardio-pulmonary Resuscitation</td>
<td></td>
</tr>
<tr>
<td>Doctor’s Rounds (Diagnostic sets, Patella Hammer, Intra-Venous Tray Toniquette, etc)</td>
<td></td>
</tr>
<tr>
<td>Closed method for burns care</td>
<td></td>
</tr>
</tbody>
</table>

Competency Related Information:

10. Knowledge of procedures/conditions. Have you done, nursed or assisted the following procedures?

<table>
<thead>
<tr>
<th>Procedure</th>
<th>Yes</th>
<th>No</th>
<th>Not Sure</th>
</tr>
</thead>
<tbody>
<tr>
<td>Drain Shortening</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lumbar Puncture</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Under Water Seal Drain</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Care of the Tracheostomy</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cardio-pulmonary Resuscitation</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Skeletal Traction</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

11. What are the four most important things to do in caring for a patient with a fractured femur in the first 48 hrs?

- 
- 
- 
-
12. What are the four most important things to do for a patient with severe burns in the first 24hrs

Section C:

Objective: To determine management thinking on the strategies that can be employed to overcome the challenges of human and material resource shortages in nurses’ training programmes.

Perception towards training
For the following statements please tick the box that best matches your view.

Key:
SA- Strongly Agree
A--Agree
NS- Not Sure
D-Disagree
SD- Strongly Disagree

---

13. Do you feel you received adequate training in the following areas?

<table>
<thead>
<tr>
<th>Area of Nursing</th>
<th>Tick Appropriate box</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>SA  A  NS  D  SD</td>
</tr>
<tr>
<td>Paediatric Nursing</td>
<td></td>
</tr>
<tr>
<td>Orthopaedic Nursing</td>
<td></td>
</tr>
<tr>
<td>Surgical Nursing</td>
<td></td>
</tr>
<tr>
<td>Medical Nursing</td>
<td></td>
</tr>
<tr>
<td>Obstetrics &amp; Gynaecology</td>
<td></td>
</tr>
<tr>
<td>Psychiatric Nursing</td>
<td></td>
</tr>
<tr>
<td>Theatre Nursing</td>
<td></td>
</tr>
<tr>
<td>Community Nursing</td>
<td></td>
</tr>
<tr>
<td>Accident &amp; Emergency Nursing</td>
<td></td>
</tr>
<tr>
<td>Intensive Care Nursing</td>
<td></td>
</tr>
<tr>
<td>Infectious Diseases</td>
<td></td>
</tr>
<tr>
<td>Burns Unit</td>
<td></td>
</tr>
</tbody>
</table>
Section D:

To be Completed by newly qualified Nurses only. (Questions 17-19 circle the appropriate answer).

14. When did you qualify? ----------------------------------------

15. Where did you train? ----------------------------------------

16. When did you start work after qualifying? ------------------

17. Have you gone for any courses or workshops after you qualified? Yes / No

18. Have you had any form of staff development training? Yes / No

19. If you were to be asked to receive one more year training without any reduction in your salary would you agree? Yes / NO

END OF QUESTIONNAIRE
Thank you for your time and effort.
Appendix 3: INTERVIEW GUIDE FOR PRINCIPAL NURSING OFFICER (PNO)

Interview Guide for Training Institutions

To be answered by the Principal Nursing Officer (PNO)

1. What is the name of your Institution? ------------------------------------------

2. Can you please state your position? -----------------------------------------

3. How many RGN’s who qualified between the years 2009 and 2012?-----------


I. What is your ideal staff establishment for RGN’s?--------------------------

II. How many vacant posts do you have?----------------------------------------

III. How many senior nurses do you have?--------------------------------------

IV. How many doctors’ posts do you have?--------------------------------------

V. How many doctor’s posts are vacant?----------------------------------------

VI. Do you have the following specialist doctors?

<table>
<thead>
<tr>
<th>Area of Speciality</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>Paediatrician</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Orthopaedic Surgeon</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Neuro-surgeon</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cardiologist</td>
<td></td>
<td></td>
</tr>
<tr>
<td>General surgeon</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Psychiatrist</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Obstetrician</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gynaecologist</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
5. How many nurses do you have with the following years of experience?

- Less than 10 years
- Between 10 and 15 years
- Between 20 and 25 years
- Above 25 years

   
   i. How many nurse educator posts do you have?  
   
   ii. How many are vacant?  
   
   iii. How many clinical instructor’s post do you have?  
   
   iv. How many are vacant?  
   
   v. What is the ideal student /mentor ratio?  
   
   vi. What is the current ratio now?  


   For the following questions circle the correct response:

   i. Do you have adequate material resources for teaching students? Yes / No  
   
   ii. Do the students often improvise with alternatives during procedures? Yes / No  
   
   iii. Do you feel your students receive comprehensive training at this institution? Yes / No  
   
   If no to above answer, what could be the reason in your own words?  

---

124
8. From your records do you think the standards of nurses training are; improving or deteriorating? (Circle the correct response)

End of Questionnaire
Thank you for your Time and Effort
Appendix 4: INTERVIEW GUIDE PRINCIPAL TUTOR (PT)

Interview Guide for Training Institutions

To be answered by the Principal Tutor.

1. Dermographic Data
   I. What is the name of your Institution?  
      1. Name of the Institution
   II. Can you please state your position?  
      2. Position
   III. How many student nurses do you have in total?  
      3. Total number of student nurses
   IV. How many in second year?  
      4. Number of students in second year
   V. How many in third year?  
      5. Number of students in third year

   I. What is your ideal staff establishment for Nurse Educators?  
      6. Ideal staff establishment for Nurse Educators
   II. How many vacant posts do you have?  
      7. Number of vacant posts
   III. How many clinical instructors do you have?  
      8. Number of clinical instructors
   IV. What is your ideal establishment for clinical instructors  
      9. Ideal establishment for clinical instructors

3. Do you have the following specialist doctors?

<table>
<thead>
<tr>
<th>Area of Speciality</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>Paediatrician</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Orthopaedic Surgeon</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Neuro-surgeon</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cardiologist</td>
<td></td>
<td></td>
</tr>
<tr>
<td>General surgeon</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Psychiatrist</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Obstetrician</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gynaecologist</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
4. Student Supervision Related Questions.

vii. How many nurse educator posts do you have?------------------

viii. How many are vacant?----------------------------------------

ix. How many clinical instructor’s post do you have?--------------

x. How many are vacant?----------------------------------------

xi. What is the ideal student /mentor ratio?-----------------------

xii. What is the current ratio now?-------------------------------


For the following questions circle the correct response

I. Do you have adequate resources for teaching students? Yes / No

II. Do students often improvise with alternatives in the practical area? Yes / No

III. Do you have computer studies in the training curriculum? Yes / No

IV. Do you feel your students receive comprehensive training at this institution? Yes / No

If no to above answer, what could be the reason in your own words?-------------------------

-------------------------------------------------------------------------
-------------------------------------------------------------------------
-------------------------------------------------------------------------
-------------------------------------------------------------------------
-------------------------------------------------------------------------
-------------------------------------------------------------------------
6. What were your pass rates for the following years?

<table>
<thead>
<tr>
<th>Year of Training</th>
<th>% Pass rates</th>
</tr>
</thead>
<tbody>
<tr>
<td>1990</td>
<td></td>
</tr>
<tr>
<td>1995</td>
<td></td>
</tr>
<tr>
<td>2000</td>
<td></td>
</tr>
<tr>
<td>2005</td>
<td></td>
</tr>
<tr>
<td>2009</td>
<td></td>
</tr>
<tr>
<td>2010</td>
<td></td>
</tr>
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7. From your records do you think the standards of nurses training are; improving or deteriorating? (Circle the correct response)

End of Questionnaire
Thank you for your Time and Effort
APPENDIX 5 : INTERVIEW GUIDE FOR POLICY MAKERS

Director Nurses Council of Zimbabwe:

**Objective:** To examine the extent to which the Ministry of Health and Child Welfare policies are responsive to changes in the socio-economic environment and the dynamics in the health sector with particular reference to nurses training programmes

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<th>Answer the following questions with YES/ NO</th>
<th>Yes</th>
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<td>1. Does the Nurses’ training programme have a budget allocated to research and development in the area of curriculum development?</td>
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<td>2. Does the Ministry of Health and Child Welfare allow the training institutions to be innovative enough to improve the quality of their training programmes?</td>
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<td>3. In your opinion, do you think the programmes receive adequate funding?</td>
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<td>4. Does the Ministry of Health and Child Welfare give institutions additional funding if an institution is in need of that due to unforeseen circumstances?</td>
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<td>5. As a controlling body are you allowed to make recommendations to a training institution e.g. To withhold enrolling students due to inadequate staffing levels?</td>
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**Objective:** To establish the effect of human and material resource shortages on both pass rates and competency levels of student nurses and the newly qualified nurses.

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<th>Answer the following questions with YES/ NO</th>
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<td>6. Do you believe there is a drop in the nurses training standards related to lack of adequate resources?</td>
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<td>7. Do you believe the pass rates for the different institutions are related to availability of resources?</td>
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8. What are the major resources impacting on the quality of training programs?

Objective: To determine management thinking on the strategies that can be employed to overcome the challenges of human and material resource shortages in the nurses’ training programmes

For the following questions check the number corresponding to your answer.

1. Strongly Agree
2. Agree
3. Not Sure
4. Disagree
5. Strongly Agree

The Following Statement Refers to:

Strategies and ways of improving the quality of training programmes in the form of both pass rates and competency levels for nurses.

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<td>9. To improve the competency of nurses the Ministry of Health and Child Welfare needs to invest more in their ICT infrastructure</td>
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<td>10. To improve the competency of nurses the Ministry of Health and Child Welfare needs to invest more in their staff training</td>
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<td>11. To improve the training programmes the Ministry of Health and Child Welfare needs to increase the financial resources to procure equipment</td>
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<td>12. The training program is facing challenges due to limited lack of skilled personnel to facilitate the trainings</td>
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<td>13. Do you think allocating more trained personnel to all training institutions will make a positive impact on the standard of training?</td>
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<td>14. Will enhancing Information, communication and Technological infrastructure help the program improve the quality of its training programs?</td>
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<td>15. Will targeting partners in the region improve the quality of training programmes?</td>
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<td>16. In your opinion, what do you think the Ministry of Health and Child Welfare should do to retain experienced personnel in the health sector?</td>
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<td>17. In your opinion, can you explain how the Ministry of Health and Child Welfare policies are affecting the general nursing training program? In your explanation can you please mention some of the specific policies?</td>
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