

**AN ANALYSIS OF THE IMPLEMENTATION OF BUSINESS PROCESS
REENGINEERING HEALTH CARE REFORM INITIATIVE IN ETHIOPIA**

by

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JUNE 2015

Dedication

To all Ethiopian health care providers

DECLARATION

I do hereby declare that this research thesis, entitled “**AN ANALYSIS OF THE IMPLEMENTATION OF BUSINESS PROCESS REENGINEERING HEALTH CARE REFORM INITIATIVE IN ETHIOPIA**” is my original work. To the best of my knowledge and belief, the thesis contains no material previously published or written by another person except where due reference is made. All sources used or referred to have been documented and cited. I further declare that this research thesis, or any part of it, has not been submitted in the past or will be in the future, for degree or other purposes, to any other educational institution.



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June 2015

Date

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AN ANALYSIS OF THE IMPLEMENTATION OF BUSINESS PROCESS REENGINEERING HEALTH CARE REFORM INITIATIVE IN ETHIOPIA

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ABSTRACT

The purpose of this research was to explore and describe the effectiveness of the health care reform implemented in Ethiopia in the form of Business Process Reengineering (BPR) and develop strategies to strengthen its implementation.

The research was conducted in two phases. In phase I, the effectiveness of the BPR health care reform was explored and described through gathering quantitative information from health care providers (n=406) using a structured questionnaire. All public hospitals of Addis Ababa, Ethiopia which have been implementing the reform from its inception (n=5) were included. In Phase II, in-depth strategies aimed at strengthening implementation of the reform were developed. Two-rounds of Delphi study were conducted to seek the opinions of senior health policy experts (n=10) and arrive at consensus on the developed strategies. Cronbach's alpha, descriptive statistics, Chi-square, logistic regression analysis, principal component analysis, weighted median score, adjusted and standard satisfaction scores, Mann-Whitney U test, and Kruskal-Wallis test were conducted for data analysis.

The BPR health care reform was able to restructure the hospitals' departments into case teams, with the goal of adopting a "one-stop shopping" approach. However, 50% of the health care providers reported that the reform was not effective to satisfy the perceived health service needs. Limited effects were reported in favour of health care quality (48%), access (50%), efficiency (51%), sustainability (53%), and equity (61%). While poor effects were reported in patient-provider (41%) and provider-management (32%) interactions.

The most important predictors that influenced implementation of the reform were financial resources (AOR=3.54, 95%CI: 1.97, 6.33), top management commitment and support (AOR=2.27, 95%CI: 1.15,

4.47), collaborative working environment (AOR=1.77, 95%CI: 1.00, 3.11), and information technology (AOR=3.15, 95%CI: 1.57, 6.32).

The overall job satisfaction in the public health sectors remained poor, with only 25% job-satisfied providers engaged. Moral satisfaction (AOR=177.654, 95%CI: 59.539, 530.08), management style (AOR=4.017, 95%CI: 1.490, 10.828), workload (AOR=2.422, 95%CI: 0.925, 6.342), and task (AOR=5.491, 95%CI: 2.307, 13.069) were the most significant factors. Job satisfaction results were significantly different among the study hospitals ($\chi^2 = 30.557, p < 0.001$).

The current health care delivery performance of the public hospitals was 60% when weighed against the World Health Organization's health system framework which required a minimum of 80% score. However, there existed a significant difference in performance at least between two hospitals ($\chi^2 = 571.902, p < 0.001$).

Five strategies that could disrupt the status quo and strengthen the BPR health care reform are proposed based on their strategic priority, which were: reinforce patient-centred quality of care services; foster a healthy and respectful workforce environment; efficient and accountable leadership and governance; efficient use of hospital financing; and maximize innovations and the use of health technologies. The strategies could be used to enrich the quality of health care interventions through continuous review, refinement and adjustment of the reform as required.

Key words: Health care reform; Business Process Reengineering; quality; access; equity; efficiency; sustainability; job satisfaction; health system; patient-centred care; workforce; leadership and governance; hospital financing; health technologies; Ethiopia.

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List of abbreviations

AAHB	Addis Ababa City Administration Health Bureau
AIDS	Acquired Immuno-deficiency Syndrome
BPR	Business Process Reengineering
BTI	Bertelsmann Stiftung's Transformation Index
CPD	Continuing Professional Development
CQI	Continuous Quality Improvement
CSA	Central Statistical Agency
EDHS	Ethiopian demographic and health survey
EHNRI	Ethiopian Health and Nutrition Research Institute
EFA	Exploratory Factor Analysis
EMA	Ethiopian Midwives Association
EPHI	Ethiopian Public Health Institute
FMHACA	Food, Medicine and Health Care Administration and Control Authority
FMOH	Federal Democratic Republic of Ethiopia Ministry of Health
GDP	Growth Domestic Product
HEW	Health Extension Workers
HIV	Human Immuno-deficiency Virus
HO	Health Officer

HSDP	Health Sector Development Program
HSTP	Health Sector Transformation Plan
IT	Information Technology
M&D	Monitoring and Evaluation
MCH	Maternal and Child Health
MD	Medical Doctor
MDG	Millennium Development Goal
MoFED	Ministry of Finance and Economic Development
NGO	Non-Governmental Organization
OHT	One Health Tool
PHCU	Primary Health Care Unit
RHB	Regional Health Bureau
SPSS	Statistical Package for the Social Science
SWOT	Strength, Weakness, Opportunities, and Treats
UNISA	University of South Africa
USAID	United States Agency for International Development
WHO	World Health Organization

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CHAPTER 1

ORIENTATION TO THE STUDY

1.1. INTRODUCTION

It has been witnessed that in the wave of the pressure to rapidly scale up health care services and enhance the quality of care of citizens, the Ethiopian government urged a countrywide health care reform initiative in the form of Business Process Reengineering (BPR). The reform has been implemented across all public health care sectors in Ethiopia. This study is conducted in line with this health care reform initiative.

The study is organized in two phases. Phase I intends to address the four specific objectives of the study. Grounded by the health system performance framework, the study explores how the BPR health care reform confronts quality, access, equity, efficiency, and sustainability of health care services. Taking into account a framework proposed for measuring job satisfaction of health professionals in sub-Saharan Africa, the study examines the association between BPR health care reform and health care providers' job satisfaction. Applying a health system framework proposed by the World Health Organization (WHO), the study analyses current health care delivery performance of public hospitals in Addis Ababa, Ethiopia. Using the causal model of BPR critical success factors, the study identifies and analyses factors that influence the implementation of BPR health care reform. These objectives are met through conducting exploratory and descriptive analysis of quantitative information gathered from public health care providers.

In Phase II, in light of the findings in phase I, the researcher explores and develops in-depth strategies aimed at strengthening implementation of the BPR health care reform. Two-rounds of Delphi study were conducted to arrive at consensus on the developed strategies.

1.1.1. Background

Although Ethiopia shows a rapid improvement in key health outcome indicators, the country still has poor health status relative to other low-income countries, even within Sub-Saharan Africa (Central Statistical Agency [CSA] 2012:13; Bertelsmann Stiftung's Transformation Index [BTI] 2014:6). As Africa's second most-populous country with a population growth of about 2.9% per year, Ethiopia has a large, predominantly rural, and impoverished population with poor access to safe water, housing, sanitation, food and health services. These factors result in a high incidence of communicable diseases including tuberculosis, malaria, respiratory infections, diarrhoeal diseases, and nutritional deficiencies (Ethiopian Health and Nutrition Research Institute [EHNRI] 2010:10). Serious health workforce shortages, management issues that cut across national, regional and district levels, and poor quality of health services are the major health service challenges that still exist in Ethiopia (Global Health Initiative 2010:6; Federal Democratic Republic of Ethiopia Ministry of Health [FMoH] 2014:5).

Ethiopia has been exploring acute health care reform strategies to meet health needs across their communities. The country had no health policy until the early 1960s. In the mid-1970s, a health policy which emphasized on disease prevention and control was formulated. In 1991, Ethiopia developed a health policy that established a decentralized health care approach which was also supported in 1993 through the establishment of a Health Sector Development Program [HSDP] (FMoH 2010:3). As part of this national effort, in 2008, the health sector reform was intensified through the application of a business management model titled "Business Process Reengineering [BPR]". BPR is the fundamental rethinking and radical redesign of business processes and the analysis and design of workflows to achieve dramatic improvements in critical, contemporary measures of performance to achieve substantial gains in the overall organizational performance (Sturdy 2010:3).

It is a business management strategy that relies upon questioning, challenging, evaluating, and redesigning every element of an institution's operational process (Goksoy, Ozsoy & Vayvay 2012:90), whereby workers gain responsibility for their output and can measure their performance (Rigby 2013:18). BPR has become an increasingly significant and integral part of the health care system in Ethiopia.

With the BPR oriented health care reform, a system of tracking clients' suggestions and complaints about services has been put in place to enable responsible departments of the FMOH to take appropriate actions. The reform was progressively implemented through a series of training sessions for managers and technicians at all levels followed by changes in staff deployment, specific job assignments and the recruitment of new staff (Addis Ababa City Administration Health Bureau [AAHB] 2008:121).

1.1.2. Ethiopia: country overview

Under the 1995 constitution, Ethiopia is a federation of nine states and two independent city administrations, governed by two federal assemblies, namely; the legislature, known as the House of Peoples' Representatives, and a smaller supervisory senate called the House of Federation (BTI 2014:6). With nearly 88 million inhabitants, Ethiopia is Africa's second-largest land area on the continent (BTI 2014:4). The country's population is considerably young and predominantly rural (World Bank 2013:3).

Ethiopia's recent economic growth rate, at slightly over 11% per annum, is remarkable and well in excess of population growth and the growth rate required for achieving the Millennium Development Goal [MDG] of reducing poverty to half by 2015. From 2010 to 2013, Gross Domestic Product [GDP] growth attained remarkable rates of 7% to 9% per year, while at the same time inflation rates rose rapidly and trade imbalances and foreign debts accrued (BTI 2014:3). Despite

improvements in agriculture and services, Ethiopia is still numbered among the world's least-developed countries. The country is ranked 173 out of 186 countries on human development index (BTI 2014:15). The agriculture sector accounts for 42% of GDP, 80% of employment and 85% of export earnings (African Development Bank Group 2011:2). According to the World Bank's 2013 economy profile (2013:26), among 189 countries globally, Ethiopia stands at 157th on the strength of investor protection index, 124th in the areas of infrastructure, and 139th on technological readiness.

Ethiopia has made significant progress towards achieving the MDGs. Six of the eight MDGs are already on track and strong efforts are being made to ensure that the remaining two are brought on track by the 2015 deadline (Ethiopian Ministry of Finance and Economic Development [MoFED] 2012:10). In recent years, Ethiopia is making dramatic improvements in people's healthcare. According to the 2011 Ethiopian Demographic and Health Survey [EDHS] report, Ethiopia shows rapid improvement in key health outcome indicators compared to the report in the 2005 EDHS (CSA 2012:13). It has been reported by the World Bank that Ethiopia has recently achieved the MDG target four on child health which aimed to reduce child mortality by two-thirds between the years 1990 and 2015 (Ramana 2013:2; MoFED and United Nation Country Team 2012:22). Encouraging results have also been achieved in HIV/AIDS control, with a combination of relatively low HIV prevalence (1.5%) and increased antiretroviral therapy coverage (58.9%) in 2012, above the average in sub-Saharan African countries (Elias & Accorsi 2013:21).

Despite an increase in per-capita spending over consecutive years, Ethiopia still spends insufficient amounts to provide quality health care (Berhanu 2013:39), and the overall healthcare is under-financed (Zeleelew 2012:2) and largely donor-dependent (Berhanu 2013:39). Although per capita allocation is increasing over time, the allocated budget for health in 2013 was below the need (FMoH 2013:84). Human resource for health crisis is also another challenge (African Health Workforce

Observatory 2010:8) the FMoH and the Ethiopian Ministry of Education are trying to address. The country is one of 57 countries listed by the WHO as having a health workforce crisis (Campbel & Settle 2009:5).

1.1.3. Health care reforms in Ethiopia

Different Ethiopian regimes have been exploring acute health care reform strategies, from a traditional medicine base to global oriented health program approaches, to satisfy health needs of the Ethiopian people. The health care reform strategies implemented at different times had their own contributions to the betterment of the health systems of the country. Among the health care reform approaches and strategies implemented in Ethiopia are reform to modern health services, reforms of the National health policy and strategy, health reforms of the Provisional Government of the Socialist Ethiopia, health reform of the Ethiopian transitional government, and the BPR oriented health care reform. These health reform approaches and strategies will be discussed in more detail in Chapter 2.

1.2. BACKGROUND TO THE RESEARCH PROBLEM

According to Austin (2011:158) the market economic principles, such as BPR, are good for generating wealth but poor at improving health and social welfare, and looking at health care environments as market places can radically affect health professions and professionals. Issues on BPR implementation or more specifically lack of implementation have become a significant concern for BPR oriented health care reforms (Bertolini, Bevilacqua, Ciarapica & Giacchetta 2011:43). Ineffective BPR implementation in health care reform, results in ineffective health care services arrangements and demotivation of health care workers. Among the major reasons for this is the fact that implementation of BPR requires higher financial resources for making changes and facing unpredictable challenges (Jamali, Abbaszadeh, Ebrahimi & Maleki 2011:357), and re-educating and retraining people to acquire

adequate knowledge about BPR concepts and its success and failure factors (Saad 2010:1).

It was reported that over 60% of BPR programs fail in practice and do not achieve their intended results (Saad 2010:1) due to different reasons. For instance, in Uganda, 69.6% of BPR failed to deliver the intended functioning due to organizational resistance to change and only 30.4% of BPR projects have delivered the intended usable Information Technology (Mlay, Zlotnikova & Watundu 2013:20). In Ethiopia, a study aimed at assessing quality of health care services witnessed shortage of basic medical equipment, devaluation and disrespecting of patients by health care providers, and violation of patient's privacy within the facilities despite implementation of BPR for a year (Beyene, Jira & Sudhakar 2011:57).

Among the major challenges of implementing BPR oriented health care reform in public health care sectors in low-income countries like Ethiopia, is organizational politics (Debela 2009:36). Civil service organizations in developing countries usually fall under the influence of the politicians because they are the instruments to impose law and order to implement government policies and strategies (Debela 2009:36). This intends to create complexity on the effectiveness of implementation of health care reform as organizational politics creates fear among followers of opposition parties to generously enrich the reform documents and effectively strive for its implementation.

Like in any other organization, health care providers in health institutions such as hospitals take an imperative role in the success or failure of a reform (Ramanigopal, Palaniappan, Hemalatha & Murugan 2011:279). BPR effort never succeeds without technical competence of the implementers (Mlay et al 2013:20) and without prior re-educating and retraining of people who will ultimately work the new process (Goksoy et al 2012:94). Moreover, if employees are absent in the BPR process, they may feel they will be displaced from their job position due to the redesigned process; this may

result in financial losses and failure of the BPR implementation (Habib & Wazir 2012:182).

Reengineering health care may lead to inadvertent voluntary resignations because of high dissatisfaction of health professionals with the process. The surviving staff may experience low morale and motivation prompted by reactions such as insecurity, distrust and anger which can also result in poorer patient outcomes. A study conducted in southern California (Burke, Ng & Wolpin 2011:89) reveals that nursing staff reporting a greater number of hospital reengineering initiatives were also less satisfied with their jobs, less engaged in their work, more burned-out, and more likely to leave their job.

1.3. STATEMENT OF THE RESEARCH PROBLEM

Despite the fact that BPR oriented health care reform is implemented across all public health care sectors in Ethiopia, the determinants of success or failure were still poorly understood. The reform was copied from the well-developed countries' models, often out of context and without considering Ethiopia's resource potentials and management capacity. The researcher observed that despite implementation of the reform, much equipment in public health care sectors were out-dated, damaged and out of use. Even though large donor investments were going to the health care sectors to reinforce the reform initiative, the infrastructure and quality of services were still underprivileged; material conditions were poor and equipment was inadequate due to budgetary constraints.

In accordance with the reform, while quality assurance and accreditation standards were being introduced in the health care sectors' laboratory diagnostic services, there was no overall hospital accreditation system exercised to guarantee that the health care sectors function within specific standards and to certify the quality of services provided. The reform clearly affirmed that public hospitals are supposed to

provide complex clinical care to patients referred from health centres and private health facilities. However, availability of adequate resources such as beds, medications, laboratory supplies and reagents had been a controversial issue. It appeared difficult to assure availability of at-most two-thirds of the equipment and supplies that the reform document recommends.

Thus, this study was concerned with the BPR oriented health care reform implemented in the public health sectors of Addis Ababa, Ethiopia. The particular concern was on the effectiveness of the reform to improve, at hospital level, quality, access, equity, efficiency, and sustainability of the services. There was also concern on the effectiveness of the BPR health care reform to improve job satisfaction and health care delivery performances in the public hospitals. The researcher had discovered that there was no study conducted in Ethiopia to evaluate the effectiveness of implementation of health care reform that uses BPR as a tool.

1.4. AIM OF THE STUDY

1.4.1. Research purpose

The purpose of this research was to explore and propose strategies to strengthen the implementation of the health care reform that uses BPR as a tool in Ethiopia.

1.4.2. Research objectives

The specific objectives of this research were to:

- 1.4.2.1. Assess and describe the perceived effects of BPR health care reform on health care services quality, access, equity, efficiency, and sustainability.

- 1.4.2.2. Identify factors that influence implementation of the BPR health care reform.
- 1.4.2.3. Examine the relationship between BPR health care reform and health care providers' job satisfaction.
- 1.4.2.4. Analyse the current health care delivery performance of public hospitals.
- 1.4.2.5. Develop strategies to strengthen implementation of the health care reform

1.5. SIGNIFICANCE OF THE STUDY

The findings of this study could contribute to the understanding of international and national level policy makers on the effectiveness of health care reform on health care services when the reform uses BPR methodologies and strategies as a tool. The researcher discovers that internationally different health care institutions have been implementing BPR health care reforms. However, until recently, there have been limited studies conducted to evaluate the effectiveness of this reform in public health care service sectors; and certainly none in Ethiopia.

The findings of this study inform the Ethiopian government on the status of the implementation of the BPR health care reform and further strategies needed to enhance its implementation. The result would help the government evaluate the extent to which the BPR reform is having the desired output. The findings would construct to the Ethiopian government a baseline data describing how deep the reform it proposes has been accepted and internalized or rejected and ignored by health care providers who, actually, are the target groups in implementing the reform. The strategies the researcher develops in support of the reform would help

the Ethiopian government enrich the quality of health care interventions through continuous review, refinement and adjustment of the reform as required.

The data and findings of the study constitute critical information to health care administrators and providers to acquire a learning environment from their experiences to let them continue on successes but design intervention measures on health service gaps. Health care administrators could apply a lesson learned to modify the reform implementation processes and procedures. The findings also offer background information for other researchers to continue the study on a larger target population.

1.6. DEFINITION OF TERMS

The key terms of this study are Business Process Reengineering, health care reform, effectiveness, and health care reform initiative. The key terms are defined and explained in the context of this study as follows:

1.6.1. Business Process Reengineering [BPR]

Business Process Reengineering [BPR] is the fundamental rethinking and radical redesign of business processes to achieve improvements in critical, contemporary measures of performance, such as cost, quality, service, and speed to achieve substantial gains in the overall organizational performance (Sturdy 2010:3). It is a business management strategy focusing on the analysis and design of workflows and processes within an organization. BPR relies upon questioning, challenging, evaluating, and redesigning every element of an institution's operational process (Goksoy et al 2012:90). BPR in the context of this study implies the business management model the Ethiopian FMoH has been applied to intensify the health sector reform of public health sectors in the country.

1.6.2. Health care reform

Health care reform is a sustained, purposeful change to improve the efficiency, equity, and effectiveness of the health sector (Senkubuge, Modisenyane & Bishaw 2014:1). It is a gradual process that resulted in significant changes in the formation and delivery of health care services and health care financing (Ghosh 2014:125). Health care reform in this study implies reengineering health care policies, systems, or strategies.

1.6.3. Effectiveness

Effectiveness is a measure of how well the outputs of a program or service achieve the stated objectives (desired outcomes) of that program or service (Productivity Commission 2013:13). It is the impact of the activities or services of interest on outcome which is consistent with desired effect (Bowling 2009:10). Effectiveness in this study implies the capability of BPR health care reform to produce the desired results.

1.6.4. Health care reform initiative

Initiative is an act or strategy intended to resolve a difficulty or improve a situation; a fresh approach to something (Oxford Dictionary 2013). In this study, health care reform initiative stipulates the country-wide health care reform initiative the Ethiopian government newly initiated and implemented in the form of BPR with the goal of improving the performance of the Ethiopian health care system and advancing the health status of the Ethiopian people.

1.7. THEORETICAL GROUNDING

The driving theoretical grounding of this study was the “Dimensions of health system performance” proposed by Knowles, Leighton & Stinson (1997:1). This approach presents indicators for five key dimensions of health system performance, namely: access, equity, quality, efficiency, and sustainability, which maps the linkages between health sector reform, changes in health system performance, and changes in health status. The approach provides a rationale for focusing on system performance as one of the principal ways to measure the results of health sector reform (Knowles et al 1997:1). The five key dimensions of health system performance indicated in the theoretical grounding have major requirements that health care reform initiatives should achieve. In the same way, the current study has taken those requirements as the major criteria which should be achieved in public hospitals of Addis Ababa as a result of implementation of the BPR health care reform. The five key dimensions and their constructs which determine the effectiveness of the BPR reform are explained as follows:

1.7.1. Access

Access is the opportunity to reach and obtain appropriate health care services in situations of perceived need for care (Levesque, Harris & Russell 2013:4). It refers to the presence of physical (availability & accommodation), economic (affordability), temporal (appropriateness), cultural (acceptability), and approachability dimensions in using health services (Fortney, Burgess, Bosworth, Booth & Kaboli 2011:643; Comber, Brunson & Radburn 2011:9; Levesque et al 2013:5). Physical dimensions represent access to general health care supplies and the ease of travelling to healthcare provider locations, while economic dimensions are those related to the cost of seeking and obtaining health care in relation to a patient’s or household’s income (Fortney et al 2011:643; Knowles et al 1997:15). Temporal dimension of

access is the time required to receive services, such as an appointment wait-time, time spent while waiting in reception, receiving treatment, and waiting for the next appointment. The cultural dimension of access signifies the acceptability of health services, such as delivering services using languages and mode of communication suitable to patients, and indiscrimination of patients (Fortney et al 2011:643: Polluste, Kallikorm, Meiesaar, & Lember 2012:7). The approachability dimension relates to the awareness of the people that some form of health service exists, can be reached, and have an impact on their health (Levesque et al 2013:5).

According to Knowles et al (1997:15), a priority of health care reform is expanding access to cost-effective health services that maximize impact on health outcomes. Improving access may imply providing services free of charge or even paying consumers an incentive, or bringing services to the consumers, thus reducing time and travel costs to zero.

1.7.2. Equity

Health equity is a situation where physical, financial, and managerial resources are adequately available to enable every individual a healthy living (Gopalan, Mohanty & Das 2011:2; Starfield 2011:34). It relates to differences in health status, utilization, or access among different income, socio-economic, demographic, ethnic, and/or gender groups. Health equity implies that resources are distributed and processes are designed in ways to move toward equalising the health outcomes of their more advantaged counterparts (Takt 2012:3).

Equitable health coverage requires a well-functioning health system (Skolnik 2015:121). Most health sector reform efforts directed toward system performance in low- and middle-income countries concentrate on definitions of equity related to access and utilization. Reforms to improve equity would target government subsidies

on the poor, establish means testing and fee waivers based on income, and/or take action to remove physical access barriers for the poor (Knowles et al 1997:15).

1.7.3. Quality

Quality care is care which is delivered according to the best evidence as to what is clinically effective in improving an individual's health outcomes safely and gives the patient as positive an experience of receiving and recovering from the care as possible (Healthcare Quality Improvement Partnership [HQIP] 2015:4). Quality in health care has three dimensions: Structure-Process-Outcomes (Haj, Lamrini & Rais 2013:17-18). Structure refers to all the supplementary aspects of a health system that support or are related to the interaction between the health system and the client (Knowles et al 1997:23). These characteristics include personnel; education, training, experience and certification, and the settings where the care is provided; such as the adequacy of the facility's staffing, equipment, safety devices, and overall organization (Haj et al 2013:20). Process refers to activities that happen during the interaction between the health system and the client, including the interpersonal aspects of care delivery, as well as those aspects of the service delivery setting that directly impact the patient (Knowles et al 1997:23). Process indicators reflect what the provider did for the client and how well it was done (Hvenegaard, Gyrd-Hansen, Arendt, Sørensen, Laustsen & Jensen 2010:6). Outcome refers to changes in a patient's current and future health status that can be attributed to the antecedent health care, and it includes patient attitudes and satisfaction, health-related knowledge acquired by the patient, and health-related behavioural change as possible outcomes (Knowles et al 1997:23).

There are several important links between quality of health care services and health sector reform efforts (Knowles et al 1997:23). The effectiveness of innovation in this effort can be evaluated by Health Services Research; which is a multidisciplinary field of scientific investigation that studies how social factors, financing systems,

organizational structures and processes, health technologies, and personal behaviours affect access to health care, the quality and cost of health care, and ultimately the health and well-being of citizens (European Commission 2011:5).

1.7.4. Efficiency

According to Sinimole (2012:140), efficiency refers to the best use of resources. Efficiency describes the technical, economic and allocative dimensions related to how and which services are produced (Yu 2011:6-7). Technical efficiency measures how well an input is converted into an output, whereas economic efficiency measures the increase in net benefits, and allocative efficiency measures how well the available resources are allocated to production that meets the preferences of the population (Productivity Commission 2012:13).

Health system efficiency can be enhanced through reduced wastage and enhanced cost-effective interventions, a shared behaviour of practitioners, and effective engagement of patients and caregivers (Smith 2012:4; Cattaneo, Galizzi and Bassani 2012:184; Hsu 2010:7). Sufficient inputs such as enough and competent health care workers and administrators, drugs and medical supplies, medical apparatuses and equipment, and a facility with sufficient rooms are among the necessities of health facility efficiency (Yu 2011:9). Likely, health facility efficiency depends on the hospitals' activities and products, and the consequences and welfare of patients (Yu 2011:10).

1.7.5. Sustainability

Sustainability refers to the capacity of a given system to adapt to external and internal pressures but continue functioning and initiate changes so as to continuously improve performance (Amo-Adjei 2013:2). Assuring hospital sustainability requires availability of financial resources and qualified staff (Palinkas,

Ell, Hansen, Cabassa & Wells 2010:106), networking with external clinical and managerial supporters (Martin, Weaver, Currie, Finn & McDonald 2012:195), and the capacity to assemble and manage resources (Knowles et al 1997:39). Sustainability of hospital services could be benefited from improved satisfaction of patients and providers with clinical or administrative services (Palinkas et al 2010:107).

Sustainable health care services should ensure benefits for patients are continued, program activities are sustained, community-level partnerships are maintained, and new organizational practices and policies are sustained (Scheirer & Dearing 2011:3-4; Calhoun, Mainor, Moreland-Russell, Maier, Brossart & Luke 2014:4). Long-term health care sustainability will be achieved by reining in demand for health care through healthier living in healthier cities and countries (World Economic Forum 2013:12; Hudson & Vissing 2013:6), which demand for massive health educations.

1.8. RESEARCH DESIGN AND METHODS

The researcher highlights below the overall framework the study follows to produce responses to the conceptual research problems. In the framework, the researcher articulates the research paradigm, designs and phases, population and setting, sample size determination procedures, data collection and analysis approaches, and data and design quality interventions. The detailed research design and methods of the research are described in Chapter 3.

1.8.1. Research paradigm

A paradigm refers to a pattern and way of viewing the world which underlies theories and methodologies within a speciality at any given time (Offredy & Vickers 2010:28). Research paradigm is an approach to thinking about and doing research based on a

set of shared assumptions, concepts, values, practices and perspective about research (Johnson & Christensen 2012:31).

This study adopted a quantitative approach. Quantitative research paradigm is a means for testing objective theories by examining the relationship among variables (Creswell 2009:4). Quantitative research was chosen for this study to gather and statistically analyse the relationship between the perceived health system performance and the information collected, and to statistically inspect whether the identified relationship is significant or not.

1.8.2. Research design

Research design is the methodology that is used to collect information to address the research question. It is a plan and the procedures for research that span the decisions from broad assumptions to detailed methods of data collection and analysis (Creswell 2009:3).

The researcher applied exploratory and descriptive research designs in a quantitative method. The study design includes two phases which covers the objectives of this study and are described as follows:

1.8.2.1. Phase I

In phase I, the researcher quantitatively assessed and described the perceived effect of the BPR health care reform on quality, access, equity, efficiency, and sustainability of public hospitals' services in Addis Ababa. The researcher achieved this through gathering information from health care providers using a questionnaire and interpreting results to analyse findings.

The site population of the study were all public hospitals of Addis Ababa (N=6) and the site target population were all public hospitals of Addis Ababa which have been implementing the BPR health care reform (N=6). Since all public hospitals of Addis

Ababa were implementing the BPR health care reform at the time of initiation of the study, the site population and the site target population of the study were the same.

Adopting a purposive sampling technique, all public hospitals in Addis Ababa which have been implementing the BPR health care reform since its inception in 2008-2009 (N=5) were selected among the site target population and included as sites for the accessible population of the study. The researcher identified all health care providers that were working in all public hospitals of Addis Ababa at the time of data collection period as total population of the study (N=1,870). Likewise, the researcher identified all health care providers that were working in all public hospitals of Addis Ababa which have been implementing the BPR health care reform as target population of the study (N=1,870).

The researcher identified all health care providers that were working in all public hospitals of Addis Ababa which have been implementing BPR health care reform since its inception in 2008-2009 as the accessible population of the study (N=1,681). The health care providers included medical doctors, laboratory professionals, nurses, health officers, pharmacists, dentists and sanitarians.

In phase I, purposive sampling technique was employed to consider all the accessible population of the study who fulfil the inclusion criteria as the respondents of the study. There were 476 respondents who fulfilled the inclusion criteria; and thus the total sample size of respondents was 476.

Self-designed structured questionnaires were used to collect primary data from the study respondents. The respondents were expected to respond to all the items that were divided in a logical order into six topic areas, namely, quality, access, equity, efficiency, sustainability, and demographics.

Using the gathered information, the researcher identified factors that influenced implementation of the BPR health care reform. The causal model of BPR critical

success factors (Jamali et al 2011:355) and in-depth review of literature were used as a framework to analyse the critical success factors of the reform. The basic factors determined were adequate financial resources, top management commitment and support, training, collaborative working environment, flatter structure, and Information Technology (IT).

Using the gathered information, the study examined the relationship between the BPR health care reform and public health care providers' job satisfaction. A framework proposed by Faye, Fournier, Diop, Philibert, Morestin & Dumont (2013:7) was used for this purpose. The framework consists of eight dimensions of job satisfaction, namely: continuing education, salary and benefits, management style, tasks, work environment, workload, moral satisfaction, and job stability.

Finally, the researcher used the gathered information to explore and analyse the current health care delivery performance of the public hospitals in Addis Ababa, Ethiopia. A health system framework proposed by WHO (2010:4) was used to achieve this. The health systems framework divides health systems in terms of six core building blocks, namely: finances, health workforce, information, governance, medical products and technologies, and service delivery.

The collected information was reviewed for logical consistencies and completeness before making data entry. All verified data was extracted into Excel spread-sheet files to allow for re-tabulation, recording and analysis. The data was exported into IBM SPSS version 20 software and analysed.

1.8.2.2. Phase II

The second phase of the study involved developing strategies to support implementation of the BPR health care reform in Addis Ababa, Ethiopia. These have been achieved through conducting two rounds of Delphi technique. With the Delphi technique, the researcher developed the strategies based on the results of phase I

of this study and shared the proposed strategies priorities with relevant health policy experts drawn from government institutions, development partners, universities, NGOs, health care administrators, and professional associations that were closely working with FMoH.

The population for phase II of the study consisted of all international and national level institutions or organizations in Addis Ababa, Ethiopia which were working closely with the AAHB and FMoH. The site target population consisted of all government health bureaus, development partners, NGOs, academics, health care administrators, and health professional associations in Addis Ababa, Ethiopia. The accessible site population consisted of institutions or organizations that consisted of senior health policy experts.

In phase II, the total number of accessible population which were nominated through personal networks and referral by other experts was 20. Using the Delphi technique as the guiding principle, 10 (50%) of the 20 senior health policy experts were purposively selected to represent the different institutions/organization included in the site accessible population.

A second self-administered questionnaire (see Annexure 2) which consists of seven strategic priorities that the researcher developed in light of the findings in phase I of this study was designed and used to collect data in phase II. In the first round of the Delphi technique, the respondents were expected to sequentially prioritize the strategies and perceive the likelihood of implementation of the strategies on the questionnaire. A second round of Delphi technique was conducted by developing the third questionnaire (see Annexure 3) based on findings of the first Delphi technique. The questionnaire was aimed at informing the panel experts about findings of the first round of the study and seeking further consensus about two strategic priorities which had a similar score on the first Delphi technique. In both Delphi techniques

conducted, the respondents received the questionnaires in a hard copy form to fill-in and return to the researcher.

1.8.3. Data management and design quality

The researcher ensured data management and design quality through the implementation of critical validity and reliability measures.

1.8.3.1. Validity

Validity is the degree to which a result from a study is likely to be truthful or genuine (Khorsan & Crawford 2014:2). In this study, the researcher reviewed and analysed from books and researches different questionnaires to revise the study's first data collection instrument until it passed the researcher's subjective evaluation. The instrument was designed based on the grounded theory of the study and it was associated with indicators used in previous health care reform researches. The respondents were selected from different professions and different departments of the study sites to obtain a representative sample of the population. A clear inclusion and exclusion criteria was used to prevent selection bias in the study. Advice was received from research experts to ensure that the study data collection instruments were actually capable of measuring what they were intended to measure. Validity of the questionnaire is discussed in detail in chapter 3.

1.8.3.2. Reliability

A reliable test is one which will produce consistent results when the same individual is tested on different occasions (Belbin 2013:11). This study increased reliability by pre-testing the questionnaires. Cronbach's alpha test was run to measure internal consistency of the first data collection instrument. The instructions in the questionnaires were made clear enough to direct the respondents. Bias was also

minimized by using a self-administered questionnaire. Reliability of the questionnaire is discussed in detail in chapter 3.

1.9. ETHICAL CONSIDERATIONS

Research ethics is a set of principles that embody what researchers ought and ought not to do, and how this should be decided (Hammersley & Traianou 2012a:17). Ethical codes and guidelines are a means of establishing and articulating the values of a particular institution or society, and the obligations that it expects individuals engaged in certain practices to abide by (European Union 2010:18). Researchers need to protect their research respondents, create a trust with them, promote the integrity of research; guard against misconduct, and cope with new, challenging issues (Creswell 2009:87).

This study had been awarded Ethical Clearance Certificate by the Higher Degrees Committee of the Department of Health Studies, University of South Africa (UNISA) (see Annexure 4). Similarly, a letter seeking ethical approval and permission to conduct the study, together with the study proposal, was submitted to the Research and Technology Transfer Core-process of the AAHB for ethical and scientific approval, and received approval (see Annexure 5).

The study respects the protection of human subjects by treating the responses as confidential in accordance with the university and the country's (Ethiopia) ethical principles to the collection, maintenance, use and dissemination of data. The researcher has taken the ethical conduct of the respondents and treated them in a way that respects and protects confidentiality and anonymity. Confidentiality was ensured by using respondent's identification number instead of their actual names and by protecting collected data from disclosure to unauthorized persons. The respondents were assured of confidentiality throughout their participation. A written informed consent was designed for phase I (see Annexure 6) and phase II

(Annexure 7) of the study to read and signed by each respondent before moving on to filling the questionnaire.

1.10. CONCLUSION

This chapter introduced the entire plan of the proposed research. It provided background information which included an overview of Ethiopia and its health care reforms. Next, it described the background to the research problem, statement of the research problem, and purpose and objectives of the research. This was followed by an outline of the significance of the study and theoretical grounding of the study. Finally, the chapter outlined the design and methods of the research to provide the rationale and procedures for collecting and analysing the data necessary to appropriately address the purpose and objectives of the research. The next chapter presents the literature review related to the proposed study.

1.11. CHAPTER LAYOUT

This thesis is organized into six chapters.

- Chapter 1 Orientation to the study
- Chapter 2 Literature review
- Chapter 3 Research design and methods
- Chapter 4 Analysis, presentation, and description of the research findings
- Chapter 5 Proposed strategies to strengthen implementation of the BPR health care reform
- Chapter 6 Study discussions, conclusions, and recommendations

CHAPTER 2

LITERATURE REVIEW

2.1. INTRODUCTION

Literature review is an integral part of the research process which involves going through the existing literature in order to acquaint the researcher with the available body of knowledge in the area of interest (Kumar 2011:31). It provides a sound base upon which new research can be founded (Paul 2012:1).

This chapter presents a description of relevant literature reviews on health care reform and its associations with BPR. Relevant literature is systematically explored and reviewed from books, journal articles, government reports, policy documents, theses and dissertations, and newspaper articles to discuss the basic concept of health care reform, describe in detail health care reform experiences of Ethiopia and other countries, discuss the basic concepts of BPR, and determine the role and effect of BPR on health care reform.

2.2. HEALTH CARE REFORM

Health care reform is principled on purposeful change in the sense of improving a nation's wellness (Feldman 2012:1). It requires thoroughly thinking the best process to achieve speedy and effective health related services and goods, identifying delays and unnecessary steps for potential errors, and redesigning the process to remove the gaps and dramatically improve the quality of care (Olson 2012:11). Though health care reform relies on a good design, its success ultimately depends on careful attention to the complex details of implementation (Tang, Bixi & Bekedam 2013:171).

Health care reform is basically complex as it needs high investment in facilities, technologies, sufficient supply of pharmaceuticals, training of health workers, and a system for quality improvement (Rechel, Ahmedov, Akkazieva, Katsaga, Khodjamurodov & McKee 2011:285). It intends to secure a sustained, purposeful, and fundamental change in the health sector as a whole or part of structural adjustment of health programs. Different countries are required to undergo health care reforms due to pressures including increases in total spending on health care services, rapid increases of government total spending, demands for access to health care, and incompetence in health services delivered (Sen & Al-Faisal 2013:290). However, the gap between the health care reform framework and the support made available for implementation is creating pressures on policy and decision makers, managers, and health professionals (Lapão & Dussault 2012:295). Besides, long-term political commitment of the local governments (Ghosh 2014:129), the support of the local governors and hospital managers, the sense of belonging of the home health care team, and the devoted communities are shown to affect health care reform strategies (Levesque et al 2013:6).

2.2.1. Health care reforms in Ethiopia

Ethiopia had for centuries its own traditional medicine for curing diseases and protecting and promoting human physical, spiritual, social, mental and material wellbeing (Getahun & Balcha 2012:15). The art of herbal therapy was the oldest medical tradition in Ethiopia, and, in all likelihood, it pre-dated other forms of indigenous healing. The cultural affinities that existed for centuries with different peoples precluded Ethiopia from developing neither fully indigenous nor wholly exotic therapeutic methods. Succeeding this era, Ethiopia has witnessed various health care reforms that aimed at improving the health and well-being of citizens. Modern medicine and medical practices, health policies and strategies, health service decentralization, and reengineering health care systems are major health

care reforms developed and exercised in Ethiopia. The major health care reforms implemented in Ethiopia are discussed as follows:

2.2.1.1. A reform to modern health services

The Imperial regime of Ethiopia's emergent contacts with Europe insisted that Ethiopia show interest in using foreign medicine innovations including initiation of modern health care facilities. Joao Bermudes, a Portuguese barber-surgeon and a member of the Portuguese diplomatic mission of 1520 - 1526 to the court of Atse Lebnadengel (1508 - 1540), was recorded as the first of the foreign practitioners in the history of modern medicine in Ethiopia (Kitaw, Teka, Meche, Hailemariam & Fantahun 2012:30). Subsequently, different Ethiopian emperors have facilitated the introduction and development of health care services. The combination of all these efforts resulted on relatively rapid expansion of health facilities and an introduction of modern medical legislations until the 1935 outbreak of the Italo-Ethiopian War (Kitaw et al 2012:38).

The reform of modern health care services in Ethiopia did not halt the usage of traditional medicine. Instead, in 1942, the Ethiopian government proclaimed formal recognition of traditional medicine where the legality of the practice is acknowledged as long as it does not have negative impact on health (Kitaw et al 2012:21).

2.2.1.2. Reforms of the National health policy and strategy

Until the 1963, Ethiopia had no national health policy and strategy. In 1963, Ethiopia launched its 2nd Five-year Development Plan for the year 1963 - 1967, and the plan was inclusive of national health policies and strategies. This health plan had an ultimate goal of establishing at least one health centre for every 50,000 people and one health station (clinic) for every 5,000 people. The plan gave emphasis to preventive medicine with an assumption that Ethiopian public health problems cannot be solved by establishing hospitals only (Kitaw et al 2012:82). While the 2nd

Five year plan exhibited significant achievements, several serious failures such as a slow expansion and weakening of basic health service units were also noted.

The health component of the 3rd Five-year Development Plans (1968 - 1973), has given major emphasis on preventive aspects of health services, with a major focus on health service development. The yearly health growth target was to be 11%, and the total domestic expenditure for health would amount to 6% of the government budget. The FMoH intermediate performance indicated that the implementation of the plan was far below the projected level. This led the ministry to a new three year plan (revised 3rd five year plan) that gave top priority to the strengthening of basic health services units, expansion of basic health services, strengthening provincial health departments, integration of special projects with basic health services, and development of health manpower (Kitaw et al 2012:92-93).

2.2.1.3. Health reforms of the Provisional Government of the Socialist Ethiopia

In 1976, the Provisional Military Government of Socialist Ethiopia that came in to power in 1974 revised the country's health policy and revealed its own. This health policy gave more attention to primary health care, rural health services, prevention and control of common diseases, self-reliance, and community participation in health activity. The socialist government's efforts to eliminate forms of healing that were based on religious/traditional beliefs put traditional medicine practitioners in a state of confusion and disrupted the emergence of new healers (Mehari, Gebeyehu & Asfaw 2012:17).

Until 1984, the government strived to achieve the health policy by developing annual plans and monitoring for their attainment. In 1984, the government prepared a ten-year Health Sector Plan that intended to strengthen and expand Maternal and Child health [MCH] services, immunize of all pregnant women and of children under 2 years, increase per-capita visits to health institutions, decrease infant and child

mortality, and increase in life expectancy. In order to achieve these targets, the plan emphasized community participation, intersectoral collaboration, integration of vertical programs and specialized health institutions, delivery of essential health service at affordable cost, and the development of a six-tier health system. The socialist government's six-tier health system consisted of community health services (health posts) health stations or clinics, health centres, district hospitals, regional hospitals, and central referral/teaching hospitals. Community health service was the first point of contact with the community, and expected to serve at least 10,000 population (Kitaw et al 2012:93; Tadesse & Ardalan 2014:7).

2.2.1.4. Health reform of the transitional government

In 1993, the transitional government of Ethiopia that succeeded the military regimen produced a national health policy. The primary objective of the policy was to harmonize the rate of population growth with socio-economic development, with a long-term objective of closing the gap between high population growth rates and low economic productivity. The policy included decentralization of the health care system, development of the preventive, promotive and curative components of health care, accessibility of health care for all, and the promotion of private sector and NGOs participation in the health sector (FMoH 2010:4; Admasu 2013:7). The policy also intended to reduce morbidity and mortality, particularly infant and child mortality (CSA 2012:4). Since then, developments have taken place nationally and internationally that have a direct bearing on the country's population.

The 1993 health policy had strategies to deliver maternal and child health services free of charge, and train and deploy new Health Extension Workers [HEWs] to institutionalize community health care services (Mehari et al 2012:26). The responsibility for health service delivery and regulation is structured in line with the decentralized federal arrangement of the country. For this reason, development of health policies, standards and operational protocols was the responsibility of the

FMoH, while implementation of developed policies, standards and protocols, and owning, financing and delivering and supervising health care services at regional levels was mandated to regional health bureaus (FMoH 2014:3).

2.2.1.5. Business Process Reengineering oriented health care reform

In 1997, the FMoH initiated HSDP, a 20-year program divided into four programs covering the years 1997/98 till 2014/15, on the basis of the national health policy developed by the transitional government of Ethiopia (FMoH 2014:2). Under the HSDPs, the FMoH was able to improve the coverage and utilization of health services throughout the country; mainly through construction of new health facilities and training and deployment of numerous health care workers (FMoH 2010:5; FMoH 2009:1). On the contrary, it was reported that many of the HSDP's objectives have remained unachieved despite revision in the successive programs (Wamai 2009:284).

Starting in 2008, the FMoH has gone through a major country-wide health care reform initiative in the form of BPR. The purpose of the reform was to establish customer focused institutions, rapid scaling up of health services and enhancing the quality of care in order to improve the health status of the Ethiopian people (FMoH 2010:20-21). A system of tracking clients' suggestions and complaints about services has been put in place to enable responsible departments of the FMoH to take appropriate and immediate actions.

In line with this, in 2008, the FMoH and agencies under the FMoH have identified seven core processes that need reengineering in order to effectively fulfil sectorial visions and missions. The seven core processes were Improving Access and Quality of Health Service, Human Resource Development, Health Management Information System, Harmonization and Alignment, Health Commodity Supply and Management System, Reduction of Epidemic Occurrence, and Finance Resource Mobilization and Utilization (FMoH, 2007:17-20). Each core process was organized with the major

aim of bringing together similar activities in one place thereby decreasing lengthy service provisions and effectively utilizes resources.

Based on the principles of BPR, the Ethiopian FMoH conducted process mapping, called “As Is” analysis, to document pertinent issues, understand the existing system/current performance gaps and examine the different dynamics that should be considered in the redesign of the new reform. Accordingly, information was gathered through deployment of various methodologies. These include review of existing documents, focus group discussion, and administration of questionnaires, key informant interview, consultative meetings and field visits. The design of the reform took into account experience of several countries and benchmarked those perceived to be practical in the Ethiopian context (FMoH, 2007:18). The design has been critically examined by national and international experts in related fields and has gained their acceptance. Extensive guidelines including standard operating procedures have been developed. Some have been extensively revised with the input of the broad experiences of international consultants.

The BPR oriented health care reform has been progressively implemented through a series of training sessions for managers and technicians at all levels followed by changes in staff deployment, specific job assignments and the recruitment of new staff. In 2007/2008, the FMoH, under its Improving Access and Quality of Health Service core process, has developed standards for specialized hospitals, primary hospitals, health centres and health posts sub-processes, and implemented in selected health facilities (FmoH, 2007:20).

In its BPR-oriented health care reform, the Ethiopian FMoH also introduced a three-tier health care delivery system that involves a Primary Health Care Unit [PHCU], general hospitals and specialized hospitals. The PHCU includes a primary hospital, health centres and their satellite health posts connected to each other by a referral system (FMoH, 2010:4).

The AAHB was among administrative regions/ city administrations in Ethiopia that have been customizing and implementing the BPR that was developed by the FMOH to health facilities that they owned. When the bureau initiated this reform, though many of the city's residents were public health facility users, the city's health service coverage was 18% showing that the service was limited (AAHB 2008:1). Besides, as Addis Ababa is the capital city of Ethiopia, beyond the city's permanent residents, patients across the country came to obtain better services. However, the health care services in the facilities were complicated and the way the facilities are structured was incapable to satisfy patient's needs.

In 2008, the AAHB studied in detail previous and existing health care systems and implementation strategies using the BPR methodologies and identified major problems, causes and effects. Among the major challenges identified were longer patient waiting time, multiple back and forth movement from one department to another, longer appointments, inadequate medical equipment and drugs, health care providers' misbehaviour and incompetency, absence of accountability, demotivated staffs, incomplete services, and lack of information communication system between health facilities (AAHB 2008:1-3). Based on these gaps, stretched objectives were synthesized and sub processes that form the core process identified.

Under its BPR implementation plan, the AAHB structured hospital services into three major case teams namely; Emergency, Outpatient, and Inpatient, where Outpatient and Inpatient case teams were further classified into eight and nine case teams, respectively (AAHB 2008:57-58). Each case team was expected to host technical, administrative and supporting staffs. A general hospital and specialized teaching hospital were expected to host 416 and 450 clinical staffs, respectively (AAHB 2008:121; FMOH 2007:157-160).

2.2.2. Health Care Reform: Countries' experiences

Irrespective of their economic status, many countries have undergone health care reform to impact the way in which public services are financed and organized, variation in quality of care tackled, and public satisfaction improved (Sharp, Cobb, Dresden, Richardson, Sabbatini, Sauser, Kocher. 2014:1). United States (Prologo & Meltzer 2014:881), China (Ramesh, Wu & He 2013:1; Bixi, Mu, Targa & Hipgrave 2012:1), European countries (Clemens, Michelsen, Commers, Garel, Dowdeswell & Brand 2014:1), Brazil and Colombia (Esteves 2012:1), and India (Satyanarayana, Ramakrishna & Jayadeva 2012:1) are amongst these countries. The countries' decisions and the ultimate responsibility regarding this reform are often political processes which lie with governments and their own unique health concern which is rooted in principled politics (Vogel 2013:1). Though the countries' governments have been attempting to reform their health care services, there is uncertainty about whether there is a best way, or even a particular way, to reform a health care service (Olson 2012:7).

Different African countries such as Ethiopia, Kenya, Uganda, Tanzania, South Africa and Lesotho have been struggling to reform their health care and achieve the vision of the African Health Strategy 2007-2015 to an integrated and prosperous Africa free of the heavy burden of disease, disability and premature death (Ssenyonjo 2012:192). However, according to Mbacke (2013:2-3), the countries are not acting according to their statement, and are defaulting on their commitment to take the lead by increasing their investments in health mainly due to improper health care financing flow and lack of commitments.

The Ugandan health sector has been faced with the challenge of under-funding for a very long time, despite the health care reforms the country has undertaken (Orem & Zikusooka 2010:7). Lutwama, Roos and Dolamo (2012:2) report that despite the health sector reforms efforts to decentralize the Ugandan health system, Ugandan

health services remained significantly poor. Okuonzi (2007:1174) indicates that official reports developed by donor funded expatriate staff on Ugandan health sector reform have tended to show a positive picture, despite the reality which is totally the reverse. Meanwhile, the study conducted by Lutwama et al (2012:1) indicates that following the Ugandan decentralization health care reform, health workers are shown to be productive, client-oriented, proactive, skilled and competent to perform their duties. Orem & Zikusooka (2010:7) also express that although the health financing reform the Uganda government proposed could worsen existing disparities in access to health services, it can address important aspects of health care financing and improve quality of health services.

Kenya has been in the process of implementing health care reforms to secure a fundamental change in the functioning and performance of its health care services. Despite these efforts, according to Chuma and Okungu (2011:12), the health system in Kenya is inequitable and the health financing is fragmented. Chuma and Okungu (2011:12) advise a systematic approach to health financing reforms as the single most way to ensure health coverage and equity of Kenya. According to Flessa, Moeller, Ensor and Hornetz (2011:13-14), Kenya has significant room for improving the efficiencies of the public and private sector facilities. The Health Sector Costing Model the Kenyan Ministry of Health designed is an opening phase to reach the target of the country's Vision 2030: a good health and reliable, equitable, affordable and sustainable health care service for the entire population of Kenya (Flessa et al 2011:14).

The Tanzanian government's Decentralization by Devolution health reform approach aimed to improve the delivery of public health services gained successes and challenges. Frumence, Nyamhanga, Mwangi & Hurtig (2013:9-10) state that the approach was benefited from the increased health workers' accountability and reduced bureaucratic procedures in decision makings; but challenged by funding

constraints, unnecessary political interference, lack of sufficient and technically qualified personnel, and weak supportive supervision activities.

Similar to countries in Africa, many countries' governments in Europe have been implementing health care reforms to review their health care systems and health care services financing and delivering approaches. According to Clemens, Michelsen, Commers, Garel, Dowdeswell & Brand (2014:6), during the current financial crisis in European countries, hospitals have become a focal point for health care reform strategies. The reform in hospitals consists of reducing cost as a short-term strategy and improving performance in the long run. However, it was claimed that the hospital reforms in the European countries put emphasis on cost containment measures rather than embarking on structural redesign of the hospital sector (Clemens et al 2014:13), and controversial decisions for new interventions are made under uncertainty (Olberg, Perleth & Busse 2014:135). Vena, Beckb, Buchnerc, Schokkaerte, Schuta, Shmuelif & Wasemg (2013:243) evaluated to what extent the preconditions for achieving efficiency and affordability are fulfilled in Belgium, Germany, Israel, the Netherlands and Switzerland after more than decade of health care reforms. The study indicates that none of these countries were able to completely fulfil all preconditions. Svaljek (2014:42) verifies that the health care reform Croatia implemented in 2008 to enhance financial stability met many of its goals. With the reform, it was possible to diversify the sources of health care financing, generate enough resources, and restore the overall financial stability of the Croatian healthcare system. Similarly, according to Jadoo, Aljunid, Sulku & Nur (2014:8), the major health care reforms Turkey has implemented to develop easily accessible, high-quality, efficient, and effective healthcare services for the population were most likely successful. The Turkish governments' strong commitment and leadership, accompanied by strong economic growth have contributed to the achievements.

In the United States of America, Prologo & Meltzer (2014:881) state that Patient Protection and Affordable Care Act the United States government signed into law outlines 10 year strategies to improve access to healthcare, quality of patient care and provider's responsible behaviour. In the reform, of the 60 million uninsured adults, 30 million are expected to get insurance coverage by 2021 (Galarraga & Pines 2013:412). The analyses made by Carman & Eibner (2014:1) shows that between September 2013 to March 2014, the United States health care reform is able to increase health care coverage with 9.3 million more people; lowering the un-insure rate from 20.5% to 15.8%.

According to Esteves (2012:1), Brazil and Colombia have implemented extensive health care reforms for decades with the major goal of improving access, increase efficiency and reduce health inequities. However, neither reform seems to have had a decisive positive impact on the health outcomes, instead, the countries' health improvement decelerates in the years following the reforms (Esteves 2012:15).

China has recently been compelled to undertake health sector reforms in response to inequitably distributed health services in the country (McCollum, Chen, ChenXiang, Liu, Starfield, Jinhuan & Tolhurst 2014:107). However, the implementation of the new health care reform aimed at tackling high medical costs was not fruitful (Jiang, Yang, Yan, Liu, Zhao & Fang 2013:1). Because of low availability of essential medicines in public hospitals, some patients had to purchase their medicines from retail pharmacies. Zhang, Xiong, Ye, Deng & Zhang (2013:1), state that though the Chinese government was able to increase health service coverage and equity through increasing primary health institutions, sustaining the gains has been difficult. Hipgrave, Guo, Mu, Guo, Yan, Scherpbier & Brix (2012:3) believe that health care reform in China will only succeed if sub-national governments are accountable for related public resource allocation, and if vertical monitoring of the quality, equity, efficiency and effectiveness of the health sector is improved. On the other side, Yan, Tang & Zhang (2014:1) recommend that China's

on-going health care reform demands constructing coherent national strategies, beating domestic and global challenges, and escalating joint health developments with the global community.

2.3. BUSINESS PROCESS REENGINEERING (BPR)

Ideally, different health sector organizations and health care institutions design new strategies that would reform their structures and processes to improve their service quality, enhance financial performance and achieve their objectives effectively. To design their new processes, they intend to use business models such as the BPR. BPR, which has its own principles and implementation process, is the business model that the Ethiopian FMoH has chosen to reform its health care services.

2.3.1. BPR meaning and principles

BPR is defined as the fundamental rethinking and radical redesign of business processes to achieve dramatic improvements in critical, contemporary measures of performance, such as cost, quality, service, and speed to achieve substantial gains in the overall organizational performance (Ghannouchi, Mabrouk & Ghannouchi 2010:689).

BPR focuses on the analysis and design of workflows and processes within an organization, and relies upon questioning, challenging, evaluating, and redesigning every element of an organization's operational process (Goksoy et al 2012:90). It involves cost and time reduction and overall organizational restructuring, including the facility location, capacity, types of products, technology and people, and changes in employees' behaviour through training, education, job enrichment, job enlargement and employee empowerment (Bertolini et al 2011:45). Implementation of BPR insists the entire organizational structure changes; from the hierarchical to

process-centred structure (Sisay & Birnberg 2012:80). Its major output is achieving an organization's objective and to satisfy customers' requirements.

BPR is a customer-focused process-driven approach managed by senior executives who could improve performances through radical changes in the system over a shorter period of time (Chigbo 2013:230). Its efforts need to be initiated from the top-down in order to ensure economic and political feasibility support (Habib & Shah 2013:8).

2.3.2. BPR implementation process

BPR project requires specific steps to succeed to a positive outcome. The process begins with defining the scope and objectives of the reengineering project (Mohapatra 2013:30). The second step of the methodology is to understand and evaluate the existing process and performance of the organization which is known as the "As-Is mapping" and the commitment of senior management to implement the project (Eftekhari & Akhavan 2013:11). This step involves development of executive consensus on the need of the BPR, identifying the strengths and weaknesses of the organization, identifying the processes to be reengineered, defining the ultimate benefit, and clarifying who is needed and what will be their role (Chiarini 2011:339). Accomplishing all of these activities require a team consisting of managers and experts of the organization and external consultants.

The third step in BPR is designing the new process, known as "To-Be process", based on the data obtained from the "As-Is" mapping, thereby implementing the To-Be process (Mohapatra 2013:30). The implementation phase requires initiating culture change program, developing a transition plan and piloting the new process, providing training for the implementers, and executing the new process in full scale (Kumar & Bhatia 2012:2; Haghghat & Mohammadi 2012:283).

Once BPR is implemented, it requires monitoring the progress of action and the results. The progress of action is monitored by measuring how much more informed the people feel, how much more commitment the management shows and how well the new teams are accepted in the broader perspective of the organization (Nisar, Ahmad & Ahmad 2014:222-223). While the result is monitored by measuring employees' attitudes, customers' perceptions, and suppliers' responsiveness (Salimi 2011:518).

2.4. THE ROLE OF BPR IN HEALTH CARE REFORM

In response to the continuing demands of the health care environments, health care reform initiatives have been implementing globally in different health care settings using different management tools such as total quality management, continuous quality improvement, just-in-time, BPR and benchmarking, among others (Yasin, Augusto, Lisboa & Miller 2011:433). BPR is among the major management approaches that have been adopted and implemented by different organizations in different countries with the goal of improving health care services operational settings and strengthening the way health care is delivered (Yasin, Gomes & Miller 2011:302).

Some studies indicate a dramatic improvement of health care services due to implementation of health care reform using BPR as a tool. For instance, in Singapore, the second largest hospital in the country was able to totally eliminate oriented health care reform (Srikanth 2012:5). In Italy, Bertolini et al (2011:61) carry out BPR of a surgical ward in a hospital with the major aim of improving service quality and efficiency. As a result, they were able to identify areas for improvement such as the number of operating sessions, preparation of the operating rooms for each operation, and availability of specific surgical instruments.

Netjes, Mans, Reijers, Wil & Vanwersch (2010:614) investigate whether the existing set of BPR best practices are suitable ingredient for efforts in health care services. They made analysis on 14 case studies and argue that previous best practices and experiences are suitable and helpful to performance improvement initiatives in the health care domain. In another study, Caccia-Bava, Guimaraes & Guimaraes (2012:734) assess the extent to which success factors they proposed in a hospital contribute to BPR successes. Their results indicate that hospital staff are doing what has been recommended as important for successfully implementing BPR projects. In their findings, strong evidence is found that hospital managers intend to use BPR project leaders with politically powerful positions in the organization.

On the contrary, it was reported that BPR is poor at improving health and social welfare. Austin (2011:158) indicates that countries have shown to fail implementing health care reforms when they use BPR as a tool. The major reasons for this are the facts that implementation of BPR requires adequate financial resources for making changes and facing with unpredictable challenges (Jamali et al 2011:357) and the adequate knowledge about BPR concepts and its success and failure factors (Saad 2010:1). According to Menberu (2013:90), BPR designs have been generally sound, but their effects have been compromised by a wide range of planning and implementation defects, including failure to institutionalize the new systems, inadequate incentive structure, and the lack of measuring and monitoring systems.

2.5. MANAGEMENT IN THE BPR HEALTH CARE REFORM PROCESS

Effective implementation and management of BPR health care reform requires dramatic changes in organizational culture, human resources structure and readiness, and financial management system.

2.5.1. Role of Management

Successful BPR implementation requires top management commitment and support. The top management needs to have adequate knowledge of BPR implementation, the skills to motivate employees and interact positively with the BPR team, and the ability to identify which specific groups and individuals will be required to support the change (Maleki & Beikkhakhian 2011:18). Ahead of beginning BPR implementation, the management need to determine that the BPR implementation team has the readiness (willingness, motives and aims) and capability (whether they have the power, the influence and the authority to allocate resources), and the appropriate information and skills to deliver the roles required from them. Top management needs to properly inform the staff why the reform is needed and how it will impact everyone's current and future jobs (Habib & Wazir 2012:175).

Top management's support and involvement during all phases of BPR project's implementation is essential for the project's implementation success (Saad 2010:5). The top management needs to induce collaborative working environment in their organization since it reduces resistance to change and simplifies its implementation (Maleki & Beikkhakhian 2011:18). Open, honest, clear and frequent communication between those in charge of the BPR initiatives and those affected by them is needed throughout the BPR process at all levels and for all audiences.

Top management's role is critical in the designing and implementation of BPR health care reform. A study conducted in Southern Ethiopia indicates that reengineering health care work environment is a key factor managers should consider to reduce workplace turnover and job dissatisfaction of nurses (Asegid, Belachew & Yimam 2014:23). Leggat, Bartram & Stanton (2011:292) also underline that health care managers need to recognize human resource management systems, structures and processes as essential components of health care reform. As incentives modify personal behaviour (Rice & Harris 2014:998), top management needs to develop

inducement strategies to ensure active participation of human resources in the BPR health care reform process.

Caccia-Bava et al (2012:729) indicate that hospital managers are not emphasizing the most important activities and tasks recommended in BPR literature, such as changes to customer related business processes or implementation of the right innovative technology. Strengthening hospital top management to perform essential activities is equally needed to result in improved hospital performance (McNatt, Thompson, Mengistu, Tatek, Linnander, Ageze, Lawson, Berhanu & Bradley 2014:9).

A flatter management structure of BPR which is less bureaucratic and more participative that also encourages creativity is equally essential for successful implementation of BPR in health care reform (Maleki & Beikhhakhian 2011:18). McHugh, Dyke, McClelland & Moss (2011:24) notify that engaging various staff throughout the planning, design, and implementation of hospital patient flow improvement strategies is critical to facilitate successful and lasting change and encounter the likelihood of staff resistance. Based on their research findings in Ghana, Alhassan, Spieker, Ostenberg, Ogink, Nketiah-Amponsah & Wit (2013:1) recommend that health care reform efforts need to integrate quality improvement strategies with comprehensive staff motivation interventions.

BPR management efforts critically require increasing technical competence of the implementers (Mlay et al 2013:20), re-educating and retraining people who will ultimately work the new process (Goksoy et al 2012:94), and overcoming staff resistance to cultural change (McHugh et al 2011:25). As training is key to improving staff performance, BPR implementers need to have an in-depth understanding of their new tasks through a proper training program (Radley 2014:13; Jamali et al 2011:355). Through training, employees should enhance key skills such as removing process redundancy, describing workflow, achieving cost reduction and income

generation goals, restructuring the organization, and mapping essential business processes (Amjad 2011:6). Habib & Wazir (2012:184) also recommend that any organization that plans for successful implement of BPR should provide education and training to staff and construct effective teams.

2.5.2. Financial management

The success of BPR implementation requires adequate financial resources for implementing changes and facing with unpredictable conditions (Jamali et al 2011:356); and the financial demand is stronger when it comes to the implementation of BPR health care reform. For instance, according to a study held in Ethiopia, despite implementation of BPR health care reform, inadequate health care budgeting continued to be an issue (Bradley, Byam, Alpern, Thompson, Zerihun, Abebe & Curry 2012:6). Despite the reform, primary health care units are experiencing financial resources scarcity which in turn is resulting in insufficient staffing and high turnover of existing staff due largely to insufficient pay, shortages of necessary medications, and poor physical infrastructure (Bradley et al 2012:6-7). Another study conducted in Ethiopia also reports shortage of material resources in health facilities despite implementation of the BPR health care reform (Beyene et al 2011:51).

2.6. INFORMATION TECHNOLOGY and BPR HEALTH CARE REFORM

The use of IT is an essential ingredient to facilitate effective implementation of BPR (Aghdasi, Albadvi & Ostadi 2010:2030) and to speed-up and integrate BPR processes (Maleki & Beikkhakhian 2011:18). IT improves data processing through eliminating unnecessary papers, which are difficult to reposition and extremely challenging to use for data analysis (Mlay et al 2013:20). According to Sobhani & Beheshti (2010:1), the integration of IT in BPR could have the potential to maximize

productivity of the organization to be reengineered. It aids in the design, development, creation, use and maintenance of information for the healthcare system. However, user competence and possible staff layoffs due to IT projects influence BPR (Mlay et al 2013:20).

Implementation of IT tools in BPR health care reform can have a positive relationship with health care improvements. Restuccia, Cohen, Horwitt & Shwartz (2012:7) found a statistically significant association between the extent of IT implementation and individual hospital quality practices, hospital performance, and patient satisfaction. Based on their study findings, Shim & Kumar (2010:795) recommend computer simulation as an effective tool to reengineer hospital process and evaluate the effects of changes in the process. Buntin & Jain & Blumenthal (2012:1214) also recommend IT as an essential foundation for restructuring health care delivery, improving health care quality, reducing costs, and increasing access through better methods of storing, analysing, and sharing health information.

However, according to Rasoulia, Bazrafshan & Shabani (2013:7), the results of various studies indicate that with the introduction of IT into BPR projects, the possibility of failure increases. A quantitative analysis of BPR conducted by Mlay et al (2013:1) indicates that 69.6% of BPR projects in Uganda failed to deliver the intended usable IT system. On the other side, the safety of IT on health has become an important issue. Williams (2013:33) underlines that all organisations need to have a comprehensive understanding of the threats and vulnerabilities that they are open to while using computer and IT systems. Health managers need to identify what kind of information is generated (Butler-Henderson 2010:7) and who has access to which information systems (Williams 2013:33). IT-induced errors are becoming critical concerns as health IT becomes more widely used and the public is increasingly affected by these types of errors (Borycki 2013:76).

2.7. BPR FRAMEWORK IN HEALTH CARE SYSTEM MANAGEMENT

Bliemel & Hassanein (2004:10) proposes a framework using specific BPR principles to address the most important problems that are affecting a health care system: patient waiting times, medical errors, high health care costs, access to health care, and access to health information. In the framework, lengthy patient waiting times can be mitigated by applying the BPR principles of Lose Wait (designing for continuous flow, and reconfiguring support activities to avoid bottlenecks), Orchestrate (coordinating between healthcare providers to balance workloads), Mass-Customise (flexibility of interaction options and service offerings to different kinds of patients), and Digitise and Propagate (digitising health records, workflows and health information).

According to Bliemel & Hassanein (2004:11), medical errors can be addressed by the BPR principles of Digitise and Propagate, Vitriify (making processes transparent to understand the health care system and identify problems quickly), and Sensitise (continuous improvement and preventing medical errors). Similarly, Orchestrate activities are proposed to reduce health care costs. Since higher health care costs are due to administrative costs, the most relevant processes and technologies that enable cost reductions are supply chain management, automatic workflow management, and claim management applications. When these are used in conjunction with electronic medical records, they can lead to significant savings by eliminating vast amounts of paper documentation, and automating many routine tasks.

Healthcare access problems draw upon the BPR principles of Orchestrate, Mass-Customise, and Personalise (making relationships between healthcare providers and patients more intimate). For this purpose, connectivity technologies are proposed as a central part of telehealth, not only for connecting patients with remote

physicians, but also to support effective communication among different physicians and specialists so that patients can receive virtual healthcare for any kind of issue (Bliemel & Hassanein (2004:12).

2.8. CONCLUSION

This chapter presented the literature reviewed in line with health care reform and BPR. As evidenced by the review of literature, over the past several decades, Ethiopia has been proactively attempting to develop and implement various health care reform initiatives aimed at building resilient health systems which could improve the health status of the Ethiopian people. Among the major health care reforms the country implemented were the reform to modern health services, reforms of the National Health Policy and strategy, health reforms of the Provisional Government of the Socialist Ethiopia, health reform of the Ethiopian transitional government, and the BPR oriented health care reform. The reviewed literature indicated that the various health care reforms implemented in Ethiopia had their own contributions to the betterment of the health system performances of the country. However, there has been no documented study which focuses particularly on the BPR health care reform and its effect on quality, access, equity, efficiency, and sustainability of public health care services. Besides, there were limitations in research conducted to identify factors that influence implementation of the reform and in those which examined the relationship between the reform and health care providers' job satisfaction.

Studies in this review documented that many countries across the globe have been designing and implementing health care reform to impact the way in which public services are financed and organized, variation in quality of care tackled, and public satisfaction improved. The effects of these reforms were shown to be highly influenced by political principles and the unique health concern of each country.

Regarding Africa, the reviewed literature revealed that African countries have exerted minimum commitment to accurately reform their health care system.

According to the reviewed literature, there is uncertainty whether there is a best way, or even a particular way to implement health care reform. Health care institutions intend to use different business models to re-design new processes to improve their service quality, enhance financial performance, and enable to achieve their objectives effectively, and BPR is amongst these business models. According to the reviewed literature, BPR has been a major management approach that has been adopted and implemented at different health care sectors.

Although studies are limited in Ethiopia, there are countries which were able to improve their health system performances due to implementation of health care reform using BPR as a tool. The BPR was used as a tool to address the most important problems that are affecting a health care system: patient waiting times, medical errors, high health care costs, access to health care, and access to health information.

However, there were also countries which failed to record positive results and considered BPR as a high-risk strategy which destructs the old organizational structure and culture. The reasons for these successes or failures were determined by critical factors such as top management commitment and support, training, flatter structure, IT, collaborative working environment, organizational culture, and adequate financial resources.

The reviewed literature pointed out that majority of the failures of BPR health care reform are at the implementation phase, pointing out that the implementation phase of BPR health care reform at health care settings is a critical step which requires much caution and preparation. For the BPR effort to be considered successful, it should yield the expected improvements in productivity and quality.

In summary, this chapter covers the literature review of the study and the sources of literature related to the key concepts of the study, which are health care reform and BPR. In the next chapter, the researcher presents in detail the research's design and methods.

CHAPTER 3

RESEARCH DESIGN AND METHODS

3.1. INTRODUCTION

This chapter discusses the research methodology of the study. It describes in detail the paradigm and design of the study, the data gathered, the instruments and methods used to gather and analyse information, and procedures followed to ethically address the study purpose and its objectives. The later section describes the methods designed to manage and analyse data. The last section describes the procedures applied to properly analyse and ensure quality of the study data.

This study was divided into two phases, where in phase I the researcher explores and describes the effectiveness of the health care reform implemented in Ethiopia using BPR as a tool; and in phase II, the researcher develops strategies based on the findings from phase I.

3.2. RESEARCH DESIGN

A research design is the overall 'blueprint' that guides the researcher in the data collection process (Gratton & Jones 2010:101). It provides the logical structure that guides the investigator to address research problems and answer research questions (Salkind 2010:1252). This study applied a quantitative, exploratory and descriptive research design to achieve the aim and specific objectives of the study.

A quantitative research approach seeks to identify, measure and evaluate phenomena and provide rational explanations for them on the belief that the study of human behaviour or social phenomenon should be conducted in the same way as studies conducted in the natural or physical sciences (Onwubere & Esiri 2012:17). Adopting deductive reasoning, quantitative research paradigm describes the

variation and diversity in a phenomenon, situation or attitude with a very flexible approach so as to identify as much variation and diversity as possible (Grove, Burns & Gray 2013:3). Quantitative paradigms have more prestige with respect to assessing public opinion for the purpose of guiding policy decisions (Roberts, Feilzer & Hough 2012:284).

The researcher opted for quantitative approach due to the reason that the outcomes of the proposed study need to be quantifiable, reliable and able to examine cause-and-effect relationships; which would be attained when using a quantitative approach. The approach guided the researcher to accurately gather information and truthfully investigate the relationship between the desired and actual performances at the healthcare facilities level. With the approach, the researcher minimized the part of manipulating the findings of the study. As an objective analyst and interpreter of a tangible reality, the researcher did the study on quantifiable explanations that can be statistically examined.

With the exploratory study design, where nothing or little is known (Kumar 2011:10), the study explored the current health care delivery performance of public hospitals in Addis Ababa, Ethiopia, and developed strategies to strengthen the implementation of the BPR health care reform.

Descriptive study design, in a more extensive sense, attempts to describe systematically a situation, problem, phenomenon, service or program, or provides information and describes attitudes towards an issue (Kumar 2011:10). Hence, with descriptive approach, the study described the perceived effect of the BPR health care reform on quality, access, equity, efficiency, and sustainability of health care services in the study sites. With this approach, the researcher was able to describe factors that influence implementation of the BPR health care reform in the study settings.

3.3. RESEARCH METHOD

Research method is the section in a research project that tells the reader about the research design and the methods of data collection (Johnson & Christensen 2012:90). The research methods followed in this study are as follows:

3.3.1. Study setting

Addis Ababa, which was the study setting, is an autonomous administrative region and the largest and capital city of Ethiopia with the status of both a city and state. It is the political capital of Africa where the headquarters of the African Union, United Nations Economic Commission for Africa and numerous other continental and international organizations are based. The city is inhabited by a population of 3,384,569 originating from different regions of Ethiopia.

Under the Addis Ababa Administrative structure, the AAHB is mandated to manage and coordinate health services in Addis Ababa; aspiring to see one of the best cities in health service delivery system in Africa where there is no disability and death from preventable and curable disease. It administers six public hospitals which are anticipated to deliver advanced preventive and curative health services.

Thus, the setting of this study was all public hospitals of Addis Ababa, Ethiopia which have been implementing BPR health care reform since its inception in 2008-2009.

3.3.2. Study population

Study population is the group of people who are the focus of a research project (Oliver 2010:76). Based on the two phases of the study, there were two sets of population included in this study. The different populations are discussed under the relevant phases of this study as follows:

3.3.2.1. Phase I

For phase I of the study, the total population constituted all health care providers that were working in public hospitals of Addis Ababa. The target population of the study were all health care providers that were working in all public hospitals of Addis Ababa which have been implementing the BPR health care reform. By the time of data collection, there were 1,870 health care providers that were working in public hospitals of Addis Ababa which have been implementing the BPR health care reform.

The accessible population were all health care providers that were working in all public hospitals of Addis Ababa which have been implementing the BPR health care reform since its inception in 2008-2009. There were 1,681 health care providers which were working in the five (5) public hospitals of Addis Ababa which have been implementing the BPR health care reform since its inception. Based on their level of profession, the population includes medical doctors, laboratory professionals, nurses, health officers, pharmacists, dentists and sanitarians.

Of the total 1,681 accessible population of the study, all health care providers that were implementing the BPR health care reform since its inception in 2008-2009 (N=476) were selected as the study respondents using purposive sampling technique. Table 3.1 summarizes the number of the different population groups of the study and the contribution of each study site.

Table 3.1 Phase I population of the study by study sites

Site target population	Total population (f)	Target population (f)	Accessible population (f)	Sample respondents (f, %)
Hospital 1	217	217	217	83 (38%)
Hospital 2	239	239	239	70 (29%)
Hospital 3	459	459	459	125 (27%)
Hospital 4	313	313	313	77 (25%)
Hospital 5	453	453	453	121 (27%)
Hospital 6	189	189	-	-
Total	1,870	1,870	1,681	476 (28%)

3.3.2.1.1. Sample and sampling methods

A sample is a collection of survey units drawn from a single or multiple frames (Scheaffer, Mendenhall, Ott & Gerow 2011:9). According to Thompson (2012:2), sampling method is the procedure by which the sample of units is selected from the population. It consists of selecting some parts of a population to study, thereby estimating something about the general population. This study had two sets of samples which were categorized based on the phases of the study.

For phase I of the study, the sample consisted of all health care providers practicing in the five public hospitals of Addis Ababa from the inception of the BPR health care reform up to the time of the data collection period. The researcher followed purposive sampling techniques to draw the respondents from the sample frames which comprised the accessible population at each hospital. The sample frames used had the names of all health care providers in the hospitals and their years of employment. From these sample frames, the names of health care providers who were hired early in 2008, at least one year before the inception of the BPR health care reform, were drawn purposively. The reason was to select respondents who knew the performances of the hospitals before implementation of the BPR health

care reform and who could better analyse the changes that occurred due to the reform initiative.

There were 476 respondents who fulfilled the inclusion and exclusion criteria of the study. The researcher designed a specific inclusion and exclusion criteria for phase I of the study and estimated the number of study respondents as follows:

3.3.2.1.2. Inclusion criteria

In phase I, to be included the respondent had to be a male or female health care provider who had been implementing the BPR health care reform in the selected study sites, age 18 years or older; with ability and willingness to provide informed consent and willingness to participate in the study.

3.3.2.1.3. Exclusion criteria

This study excluded in phase I a health care provider who was hired once implementation of the BPR health care reform was started, as the respondent may not have been knowledgeable of what happened before the implementation of the reform initiative in the study hospital.

3.3.2.1.4. Data collection method

Data are records of observations, actions or patterns of symbols that stands for observed values or actions (Lowrance 2012:7). Collection of data is an essential component in the production of useful data for analysis. It involves selecting or designing specific techniques to be used to collect the necessary data (Connaway & Powell 2010:111). In this study, the researcher designed data collection methods and procedures in such a way it safeguards the data quality, cost of the study, non-response rate, reliability, and overall coverage. The detailed data collection procedures are as follows:

The researcher collected primary data from the respondents using a self-designed structured questionnaire. A questionnaire is a form containing a set of questions, especially one addressed to a statistically significant number of subjects as a way of gathering information from a survey (Connaway & Powell 2010:146). Questionnaire based data collection is, thus, a technique used for gathering information about the characteristics, behaviours and attitudes of a population by administering a standardized questionnaire to a sample of individuals (Clifford, French & Valentine 2010:77).

The use of questionnaire as data collection instrument had multiple advantages to the researcher. It prevented unnecessary manipulations of the study data by the researcher, thereby reduced biases. It also helped the researcher collect the intended large amounts of information in a reasonable period of time and in a relatively cost effective way. With the self-administration method, the respondents arranged their own convenient and adequate time to complete the questionnaire. Andres (2012:47) states that because a respondent is not confronted with having to disclose information to an interviewer, a self-administered questionnaire mode is more conducive to studies on sensitive topics. The fact that many health care providers, such as respondents of this study, are familiar with questionnaire based research could decrease non-response rate aroused from data collection instrument.

However, the use of questionnaire may have a low response rate as respondents may not return the survey questionnaire. To address this concern, the researcher made the questionnaire attractive, concise, easy to complete, and easy to return. Moreover, the researcher used multiple follow-up contacts of respondents to ensure that the questionnaires are completed and returned. When questionnaires are prepared in a standardised form, researchers will not be able to explain any points in the questions that respondents might misunderstand or misinterpret. To minimize this gap, the researcher pre-tested the questionnaire to ensure the questions were easily understandable and clear to the respondents.

With the major aim of developing a quality questionnaire, the researcher reviewed secondary data, assessed related studies that have been conducted previously, determined the target population and their educational levels, and considered the advice of experts before designing the questionnaire. The researcher combined these aspects with his existing knowledge about the kind of information to be collected, thereby designed the study's questionnaires in such a way they are fully understandable by the respondents and provided the most accurate and complete information. The researcher developed the data collection instrument for each phase of the study.

3.3.2.1.5. Data collection instrument

A questionnaire (see Annexure 1) was developed for phase I of the study. The layout of this questionnaire was divided in a logical order into six contents, namely quality, access, equity, efficiency, sustainability, and demographics, based on the concept that constructs theoretical grounding of the study. The respondents were required to indicate their level of agreement to a statement using a close-ended 5-level Likert scale. A Likert scale measures an ordinal variable with response options "Strongly agree," "Agree," "Neutral," "Disagree," "Strongly disagree" (Bethlehem & Biffignandi 2011:203). The scale consists of assigning a numerical value to intensity (or neutrality) of emotion about a specific topic, and then attempts to standardize these response categories to provide an interpretation of the relative intensity of items on the scale (Onwubere & Esiri 2012:56).

The researcher prepared the questionnaire in a self-administered format. According to Andres (2012:47), a self-administered questionnaire requires that the respondent completes the questionnaire unaided by an interviewer. With this format, the respondents were able to complete the questionnaire at their leisure which could make responses more thoughtful and reflective.

Moreover, the researcher prepared the entire questionnaire in a structured format. Structured questionnaire enables researchers and respondents share the same theoretical frame of reference and interpret the words, phrases and concepts used in the same way (Bowling 2009:300).

At the last part of the questionnaire, the respondents were required to answer study-specific demographic questions which provided relevant information about each respondent, such as age, gender, duration of work in year as health professional, duration of work in year as health professional in the hospital, profession, and level of education which are designed in multiple choice form. The questionnaire for phase I was designed to address the first four specific objectives of the study.

3.3.2.1.6. Pre-testing the data collection instrument

The researcher needed to verify that the language used in the questionnaire was clear and understandable, the layout of the questionnaire was user-friendly and easy to read, and the amount of time it would take to complete the questionnaire was realistic. For these reasons, the researcher pre-tested the questionnaire at the study sites. In phase I, the researcher printed copies of the questionnaire and distributed randomly to one provider at each study hospital for pre-testing the instrument. The five randomly selected health care workers were a laboratory professional, medical doctor specialized with surgery, matron nurse, environmental health technician, and pharmacist. The researcher described to each provider the need of pre-testing the instrument, and then requested them to weigh the questionnaire. The researcher went back to each study site to carry out debriefing with the pre-testers to assess any problem with the questionnaire design leading to ambiguity of words, misinterpretation of questions, inability to answer a question, sensitive questions, and many other problems associated with the questionnaire and the process of administering. The researcher then revised and modified the questionnaire according to the feedback.

3.3.2.1.7. Data collection instrument administration

The researcher used a questionnaire drop and pick-up approach to collect the data. This approach involved leaving the self-administered questionnaire at the respondent's duty room and picked the questionnaire up at a later and arranged date (Clifford et al 2010:83).

The researcher went to each hospital, explained the study and consents to each respondent, gave instructions, and left the paper-based questionnaire with an envelope to the respondent to complete. The respondent then self-administered the questionnaire using a paper-and-pen approach within ten days of receiving the questionnaire, sealed it inside the envelope, and dropped it in a sealed box provided by the researcher at each study site or dropped in the office specifically arranged for this purpose. The researcher returned to the study sites within ten days to collect the completed questionnaires.

3.3.2.2. Phase II

For phase II, the total site population were all international or national level institutions or organizations in Addis Ababa, Ethiopia which were working closely with the AAHB or FMOH. The site target population consisted of all government health bureaus, development partners, NGOs, academics, health care administrators, and health professional associations in Addis Ababa, Ethiopia.

In this phase, the total population included all senior health policy experts in Addis Ababa, Ethiopia. The target population included all senior health policy experts that were working in government health bureaus, development partner Institutions, NGOs, academics, health care administrations, and health professional associations found in Addis Ababa.

The accessible population included senior health policy experts who were nominated through personal networks and referral by other experts from the target population

through purposive sampling technique. The total number of accessible population nominated was 20. Using purposive sampling techniques and the sample size requirements of Delphi technique, 10 (50%) of the 20 senior health policy experts were selected to represent the different institutions/organization included in the site accessible population. The name of the site target population, the accessible population, and the contribution of each site are summarized in Table 3.2.

Table 3.2 Population of the study by study sites

Site target population	Accessible population (f)	Sample respondents (f, %)
Ethiopian government health bureau	2	1 (50%)
Development partners	3	2 (67%)
Non-Governmental Organizations	5	2 (40%)
Academics/Universities	4	2 (50%)
Health care administrators	2	1 (50%)
Health professional associations	4	2 (50%)
Total	20	10 (50%)

3.3.2.2.1. Sample and sampling method

For phase II, the sample comprised of 10 relevant health policy experts purposively selected from the accessible population. A total of 13 experts were purposely drawn from the 20 experts nominated through personal networks and referral by other experts. The selected experts were listed categorically to make the respondent's list representative of national and international level institutions/organization. The researcher communicated the selected experts personally until the required number of experts (10) needed based on the Delphi technique is attained. The remaining three were kept to substitute any missing respondent.

In phase II, for the respondents to be included in the study, they had to be holding a PhD in the field of health policy or public health, with 15-20 years of extensive services in national and/or international health programs, possessing a wide experience of lecturing in universities and conducting research focusing on Ethiopian health policies, and knowledgeable in health policies. The study excluded in phase II a health policy expert who was involved in the designing of the BPR health care reform.

3.3.2.2.2. Data collection

For phase II, two questionnaires were developed in two rounds to meet the fifth specific objective of the study which aimed at developing strategies to strengthen implementation of the BPR health care reform. The questionnaires were developed using the principles and procedures of the Delphi technique.

In the first round, the questionnaire (see Annexure 2) which consisted of a set of seven strategic priorities that the researcher extracted based on findings of phase I of the study was developed. The seven strategic priorities included were proposed as to likely strengthen implementation of the BPR health care reform and attract significant impact on future health care systems in Ethiopia, particularly in the Health Sector Transformation Plan (HSTP) period (2016-2020). However, the strategic priority statements were not ordered by priority of importance. Thus, in section A of the questionnaire, the respondents were needed to sequence the strategic priorities into 1 to 7. While in section B, the respondents were needed to consider how likely it is that certain changes will occur in the years 2016-2020 due to each strategic priority. To complete section B, the respondents were needed to choose “Likely” or “Unlikely” by marking “√” in either of the block that they feel were the most appropriate.

In the second round, another questionnaire (see Annexure 3) which consisted of a question to further differentiate the rank between two strategic priorities with similar

number of votes was developed. The questionnaire also included information about outcomes of the first questionnaire.

Thus, the questionnaires for phase II of the study were guided by the Delphi technique which assists in developing a consensus of opinion regarding the strategies proposed by the researcher. The researcher identified the Delphi technique as an appropriate method to produce applicable strategies for decision making in the context of implementation of the Ethiopian BPR Health care reform. The Delphi technique is a method used to obtain the most reliable consensus of opinion of a group of experts by a series of intensive questionnaires interspersed with controlled feedback (Keeney, Hasson & Mckenna 2011:3).

3.3.2.2.3. Data collection instrument administration

In phase II, the researcher discussed with colleagues and senior researchers about the second questionnaire and modified it based on their feedback. Similarly as in phase I, in phase II, the researcher went to the offices of each panel expert, explained the study and the consent each expert agreed, gave instructions, and left the paper-based questionnaires for the experts to complete. The experts, then, self-administered the questionnaires in a paper-and-pen approach within two days of receiving the questionnaires, and put them in a locked cabinet until the researcher returned to collect the completed questionnaires.

3.3.3. Variables used in the study

A research variable represents a concept or construct that can be measured or calculated in research and varies or changes in value (Onwubere & Esiri 2012:48). It can be categorized as independent variable where it is responsible for bringing about change in situation, phenomena or circumstance, and dependent variable where the change brought about by the introduction of an independent variable (Kumar 2011:66). In this study, the dependent variables were healthcare quality,

health service accessibility, health equity, health service efficiency, health care sustainability, job satisfaction, and health care delivery performance. The independent variable was BPR health care reform.

The AAHB and FMOH have initiated and implemented the BPR health care reform, which is the independent variable of the study, to bringing about change in the overall health care service performances. The dependent variables, which are the particular changes to be brought about due to the reform, are improvements in health services accessibility, equity, quality, efficiency, sustainability, job satisfaction, and health delivery performance.

3.4. ETHICAL CONSIDERATIONS

Research ethics are concerned with moral behaviour in research contexts (Wiles 2013:4). Oliver (2010:12) argues that in all research involving the collection of data from human beings, there is a fundamental moral requirement to treat those people in accord with the standards and values which affirm their essential humanity.

This study respects the protection of human subjects by treating the responses as confidential in accordance with the university and the Ethiopian ethical principles to the collection, maintenance, use and dissemination of data. The researcher employed the following ethical considerations during the course of the study:

3.4.1. Permission to conduct the research

The researcher had submitted a standard application for ethical approval of the study to the Higher Degrees Committee of the Department of Health Studies, University of South Africa (UNISA), and the study was granted Ethical Clearance Certificate accordingly (Annexure 4).

Similarly, the researcher submitted a letter seeking ethical approval and permission to conduct the study to the Research and Technology Transfer Core-process of the AAHB, and received approval (Annexure 5). In the approval letter, the AAHB requested support to each study site to facilitate the data collection process of the researcher.

3.4.2. Informed consent

As indicated by Fee (2012:173), informed consent is the agreement by adults to participate in research after they understand the procedures and the risks. Hammersley & Traianou (2012b:7) express that researchers need to gain informed consent through a consent form which lays out what will be involved in the research, and the rights and responsibilities each side has.

In this study, the researcher made respondents of the study practice their free will to participate in the study voluntarily, and with self-determination. For this to happen, the researcher developed a written informed consents for phase I (Annexure 6) and phase II (Annexure 7) for each respondents to read and sign before moving on to filling the questionnaires. As also described in the consent form, participation in this study was entirely voluntary and respondent's refusal to participate in the study would not result in negative consequences in their day-to-day work or on their personal life.

The researcher honoured the concerns of individual respondents involved in the study. Hence, the researcher respected the right at any time of respondents to withdraw from participation or choose not to answer any question. The researcher's contact information was included in the consent forms for use by respondents in the event they have a concern or need further clarification on an item.

3.4.3. Subject confidentiality and anonymity

The researcher was committed to safeguard and genuinely protect the dignity, privacy, freedom and well-being of the study respondents. The researcher kept data and the findings of the study anonymous, so that the respondents' information would not be shared with anyone.

All through the study, the researcher ensured confidentiality by using respondent's identification numbers rather than their actual names, and by protecting collected data from disclosure to unauthorized person. Besides, the researcher affirmed that the gathered information would not be used for different purposes than what it was gathered for.

3.4.4. Potential risk and benefit

The researcher deeply assessed the nature, extent, and likelihood of risks and benefits of the study on respondents and the study populations. The researcher expected no risks, harm or adverse events posed by the proposed study which may endanger the safety of respondents. However, the researcher presumed that phase I respondents may feel uncomfortable to share information for fear of not having trust in the health care reform. In this case the researcher ensured and explained confidentiality of the study.

The researcher undertook this study for academic purposes. Hence, there was no compensation or reimbursement from the researcher to the respondents and the researcher advised this to respondents beforehand. Though the study may or may not have a direct benefit for the respondents, it was possible that the BPR health care reform they are applying may be more effectively implemented as a result of the outputs of this study.

3.4.5. Ethical issues related to study design and methods

The researcher considered a research misconduct, which is characterized as “fabrication, falsification, or plagiarism in proposing, performing, or reviewing research, or in reporting research results” (Johnson & Christensen 2012:101), as completely unethical and the most serious professional crime. Thus, the researcher applied research ethics at each stage of the study. The researcher fostered high ethical standards and strictly complied with the overall principles of professional scientific conducts while proposing, performing, interpreting, and reporting the study.

3.4.6. Scientific integrity

The researcher expressed commitment to intellectual honesty and personal integrity for the responsible conducting of the research and maintaining scientific excellence, trustworthiness, and lawfulness. The researcher highly believes in professional responsibilities; and was committed to reporting only the work of this study and be honest with the contributions of collaborators. The researcher conformed to the ethical permissible boundaries to conduct the study honestly and report the study findings to the scientific community in a full, open, and reasonable fashion. To broaden the understanding of the responsible conduct of research, the researcher has attended and certified with the United States National Institute of Health (NIH) modules on the protection of human subjects (see Annexure 8) prior to starting the data collection process.

3.5. DATA MANAGEMENT AND ANALYSIS

Data analysis was done through calculation of several statistical procedures on IBM SPSS version 20 and on Excel 2010. Data analysis was conducted using descriptive statistics, Chi-square, logistic regression analysis, principal component analysis, weighted median score, non-parametric analysis (Mann-Whitney U test and Kruskal-

Wallis test), and adjusted and standard satisfaction scores. The critical data management and analysis procedures the researcher followed are described below:

3.5.1. Data entry, editing, and handling

Once the questionnaires were collected, the researcher checked if every data file actually contained the needed information before making the data ready for coding and transfer to digital form. The researcher edited the information by checking and adjusting the collected information for consistency, omissions, and legibility. Whenever errors were detected on the information, the researcher diagnosed and edited to make the information more complete, consistent, and readable. For the very small number of missing data elements, values were imputed using the mean of all the non-missing data elements for that variable.

Following this, the researcher made a coding procedure and recorded in the database all the respondents' responses for each question to facilitate computerized data analysis. The researcher then made data cleaning check to verify that all codes are accurate and legitimate. The data was then stored and shared with the statistician for assistance in the analysis.

3.5.2. Data storage and disposition

The study's data was stored in the researcher's computer and in a hard-drive; in both cases password protected due to proprietary, ethical and privacy considerations. The researcher kept the data files in such a way they could be properly tracked whenever the researcher needed them. The paper-based filled questionnaires were stored in a lockable file cabinet in the researcher's office. The researcher will retain the data at least for five years before they may be erased.

3.6. DESIGN AND DATA QUALITY

Data quality is the degree to which information and data can be a trusted source for any and/or all required uses. Fan & Geerts (2011:3) highlights five central issues regarding data quality, namely data consistency, data de-duplication, data accuracy, information completeness, and data currency. Data consistency refers to the validity and integrity representing real-world entities. Validity and reliability are the most important psychometric properties to consider in using research procedures.

3.6.1. Validity

According to Roberts & Priest (2010:167), validity is the extent to which the research is plausible, credible, trustworthy and defensible. Validity implies that the research measures only the outcome it is intended to measure (Walker & Almond 2010:13). The researcher ensured the validity of the study through implementing internal and external validity interventions.

Internal validity is the extent to which the effects detected in the study are a true reflection of reality rather than the result of extraneous variables (Grove et al 2013:212). The researcher increased internal validity of the study by randomly assigning the respondents to the different levels of the independent variable and cross-checking the collected information to check if data is missing, unreliable or duplicated. The researcher reviewed and analysed from books and researches different questionnaires to revise the study's data collection instrument until it passed subjective evaluations due to the researcher. The researcher emphatically believes that public health care providers, who are the ultimate resources of health systems, are the best candidates to validate the success or failure rate of the BPR health care reform implemented in Ethiopia.

The researcher believes that the major reform the Ethiopian government has designed and implemented to date to enhance the health care service delivery

system in the country is the BPR health care reform. In this manner, this reform, which the researcher stands to assess, is responsible for major public health care services' gains or losses. Thus, findings of the study have not been affected by confounding factors.

External validity or generalizability is present when conclusions drawn from the research can confidently be applied to populations other than the one examined (Roberts et al 2012:288). It is concerned with the extent to which study findings can be generalized beyond the sample used in the study (Grove et al 2013:212). The researcher maximized the sample size to the extent it would be certain to draw conclusions to generalize the findings to the population of the study. Health care providers from all health professions or disciplines were included to ensure the study findings do represent the opinions of all health care providers. The inclusion of all public hospitals of Addis Ababa as study sites maximized the scope of the study to the larger target population.

3.6.2. Reliability

Keller and Casadevall-Keller (2010:7) depict reliability as the degree to which different methods or people would arrive at the same data or results. Likewise, Tyler (2010:57) defines reliability as the degree to which the same instrument provides a similar score when used repeatedly.

Reliability of the study's data collection instruments was ensured by running Cronbach's alpha test for each category of items, and results were found to be very satisfactory. The researcher made the questionnaires close-ended to ensure a rational reproducibility of the study. The questionnaires were pre-tested to build reliability of the instruments.

3.7. CONCLUSION

In this chapter, the researcher described the research design process, and deeply defines the sampling and data collection methods and procedures the researcher follows to conduct the research. In the next chapter, the researcher presents the analysis and description of the research findings.

CHAPTER 4

ANALYSIS, PRESENTATION AND DESCRIPTION OF THE RESEARCH FINDINGS

4.1. INTRODUCTION

In this chapter, the findings of phase I of the study are presented and discussed.

The purpose of this study was to explore and propose strategies to strengthen implementation of the health care reform that uses BPR as a tool in Addis Ababa, Ethiopia. The specific objectives of the research were to:

- assess and describe the perceived effects of BPR health care reform on health services quality, access, equity, efficiency, and sustainability;
- identify factors that influence implementation of the BPR health care reform;
- examine the relationship between BPR health care reform and health care providers' job satisfaction;
- analyse the current health care delivery performance of public hospitals; and
- develop strategies to strengthen implementation of the health care reform

As described in chapter one, the grounded theory of the study is determined by five key dimensions of health system performance, namely; quality, access, equity, efficiency, and sustainability, that maps the linkages between health sector reform, changes in health system performance, and changes in health status. In this

chapter, the researcher presents the detailed demographic data and findings of the study as they relate to the first four specific objectives of the study. The researcher addresses the fifth specific objective in chapter 6.

The effectiveness of the BPR health care reform was analysed and interpreted by focusing on the five dimensions of health system performance as described in chapter 1 of this study.

4.2. DATA MANAGEMENT AND ANALYSIS

The methods and procedures followed during data collection, entry, and analysis are described below.

4.2.1. Data collection and management

Following the receipt of ethical approval letter from the AAHB, the researcher approached medical directors at each of the study hospitals, presented the ethical approval letter, sought and received further site-level permission to conduct the study from the medical directors. Data collection was initiated by obtaining sample frames from human resource office of each study site and samples were selected as described in chapter 3. The sample frame used was a list in each study hospital comprising all health care providers who have been implementing the BPR health care reform (N=1,681). The health care providers included medical doctors, laboratory professionals, nurses, health officers, pharmacists, dentists and sanitarians.

Before starting the actual data collection process, the researcher pre-tested the data collection instrument by selecting one health care provider from each study hospital as described in detail in chapter 3. There were written and verbal comments that the researcher was able to address. The pre-testers commented that seven items included in the questionnaire, such as “The hospital meets International standards”,

“Implementing tools including new rules and regulations were prepared”, and “Front line staff are empowered” would be biased to the study respondents. The researcher, thus, omitted the items. Wording comments were also raised on six items, in which the researcher revised the words in the items and made the statements friendly. In the demographics part of the questionnaire, it was commented that the item “marital status” is not relevant to the study. The researcher omitted the item accordingly.

There were also some comments on the introduction part of the questionnaire and on the consent form. In the introduction part, there was a word “opt out” that the pre-testers predicted as difficult for respondents to understand. The researcher substituted this word with a more friendly word, “the right to refuse”. In the consent form, the pre-testers commented that the 10-15 minutes estimated to complete the questionnaire should be increased to 15-30 minutes to ensure quality assured responses. Considering the comment, the researcher suggested a reasonable time (15-20 minutes) and this has been agreed by the pre-testers. As a general comment, the pre-testers stated that the questionnaire was realistically capable of evaluating and addressing the BPR health care reform and the format in use was very user-friendly.

Following the pre-testing stage, data were collected from respondents who met the eligibility criteria described in chapter 3. The data collection instrument for phase I of the study was a close-ended self-administered questionnaire that requires a five-point Likert scale of response (refer to Annexure 1). The questionnaire presented five alternate response scales to each question on an agree/disagree continuum.

4.2.2. Data analysis

There were 476 health care providers in the study public hospitals that had been hired before initiating implementation of the BPR health care reform. Thus, a total of

476 questionnaires were duplicated for distribution. While the researcher was distributing the questionnaire, 11 (2.3%) providers declined to take part in the study, thus, the questionnaire was distributed to 465 respondents who consented. The researcher distributed the questionnaire phase-by-phase among the hospitals. Completed questionnaires were collected at each study hospital within eight days of the questionnaire distribution. Extreme follow-up efforts have been made to attain the maximum possible response rate. Starting the fifth day of the questionnaire distribution, respondents were randomly asked verbally and telephonically if they had already completed the questionnaire, and those who didn't were planned for further follow-ups. More follow-up emphasis was given for those respondents who received the questionnaire vary late as they were on a continuous night duties.

A total of 410 questionnaires were retrieved. Of these, 4 (0.98%) were found to be incomplete; thus 406 questionnaires were presented for analysis. The aggregate response rate was 88%. This high response rate for a self-administered questionnaire suggests that response biases are minimal. The non-respondents were fairly distributed among the various health professions in the hospitals, and their non-response did not influence the characteristics of the study population. Table 4.1 summarizes the distribution of response rates by study sites.

Table 4.1 Hospital response rate

	Total sample	Return	Return %
Hospital 1	81	72	89
Hospital 2	68	56	82
Hospital 3	119	104	87
Hospital 4	76	71	93
Hospital 5	121	107	88
Total	465	410	88

Responses from the returned questionnaires were coded and entered into the pre-arranged Microsoft Excel 2010 spread sheet in a 5-point Likert scale of agreement (Strongly agree=5 to Strongly disagree=1). The electronic output was carefully scrutinised to ensure that all responses were captured. Above all, the computer output was cross-checked and verified against the completed questionnaires in order to eliminate any form of bias that could arise from data capturing.

Each of the five responses had a numerical value (1-5), in which the highest two scoring answers (4 and 5) were perceived as positive response answers, the lowest two scoring answers (1 and 2) were considered negative response answers, and the middle response answer (3) was perceived neutral. As the question items were grouped into health care performance dimensions, a scale score was computed as the mean of the scales' item scores.

The data was exported from the Microsoft Excel to IBM SPSS version 20 for further analysis. The variables were re-coded and dichotomized where appropriate on SPSS. Descriptive statistical analysis was conducted to describe the means, standard deviations, medians and frequencies of items aimed at measuring quality, access, equity, efficiency, and sustainability of health care services. Non-parametric analysis, namely Mann-Whitney test and Kruskal Wallis test, were conducted to statistically test if there was a significant difference in answering tendencies of respondents with different groups on job satisfaction, and the quality, access, equity, efficiency, and sustainability of health care services.

Data was summarized using tabular and graphic presentations to describe the findings. Association between socio-demographic characteristics and job satisfaction, as well as comparison of the level of job satisfaction between categories of health care professionals, was assessed for statistical significance using 'chi-square' test of association. The weighted median scores were used to demark cut-off points and categorize the perceived health service improvements. Chi-square

test was made to evaluate association of different variables, and $p < .05$, at 95% CI, was taken as cut off point for statistical significance.

The association between health service improvement and BPR critical success factors were tested independently using bivariate analysis. Those variables which have significant associations were analysed further with logistic regression analysis. The same procedures were followed to determine predictors of job satisfaction. The overall score under each specific objective was compared to findings of previous studies.

4.3. SOCIO-DEMOGRAPHIC PROFILES

The researcher captured socio-demographic data of the 406 respondents who participated in the current research through a dedicated column in the standardized questionnaire. The questionnaire included in its section six significant items, namely, age, gender, duration of work as health professional, duration of work as staff in the hospital, profession, and level of education. Data was compiled and analysed to provide relevant information for the study. The demographic profiles are described in detail in Table 4.2 below.

Table 4.2 Socio-demographic characteristics of respondents

Item	Count (n=406)	%	Cumulative %
Gender			
Male	124	30.5	30.5
Female	282	69.5	100.0
Age (yr)			
20-29	93	22.9	22.9
30-39	195	48.0	70.9
40-49	92	22.7	93.6
50-59	26	6.4	100.0
Duration of work as health professional (Yr)			
6-9	146	36.0	36.0
10-19	202	49.8	85.7
20-29	55	13.5	99.3
30-39	03	0.7	100.0
Duration of work as staff in this hospital (Yr)			
6-9	247	60.8	60.8
10-19	136	33.5	94.3
20-29	21	5.2	99.5
30-39	02	0.5	100.0
Profession			
Medical Doctor	35	8.6	8.6
Laboratory	24	5.9	14.5
Pharmacy	16	3.9	18.5
Nurse	304	74.9	93.3
Health Officer	14	3.4	96.8
X-ray technician	11	2.7	99.5
Sanitarian	2	0.5	100.0
Level of education			
Certificate	2	0.5	0.5
Diploma	37	9.1	9.6
Degree	342	84.2	93.8
MSc/MA or MPH	7	1.7	95.6
Medical Doctor Degree + Speciality	18	4.4	100.0
Total	406	100	100

4.3.1. Age

Knowing the age of the respondents was important to determine how the different age groups perceive the different aspects of the BPR health care reform and how significant the differences among different age groups are. How young or old the respondents would determine their experiences with the BPR health care reform, its critical success factors, and its role on job satisfaction. Comparing the four age groups in the study, the age group of most respondents [195 (48%)] was between the ages of 30 and 39.

4.3.2. Gender

Gender was used to segment results of the study bearing in mind that men and women could have diverse perceptions, thinking, and feelings towards the effect of the BPR health care reform and its association with job satisfaction. In this study, 282 (65.5%) and 124 (35.5%) of respondents were female and male, respectively, which indicated that majority of the respondents were female. From the male and female respondent group, only 12 (9.7%) male and 14 (5%) female respondents, respectively, were in the 50-59 age group. Table 4.3 describes cross-tabulation of age and gender of respondents.

Table 4.3 Cross-tabulation of the age and gender of respondents

		Gender		Total
		Male	Female	
Age category	20-29	24	69	93
	30-39	61	134	195
	40-49	27	65	92
	50-59	12	14	26
	Total	124	282	406

4.3.3. Duration of work

The work experience of the respondents as health professionals ranged from 6 to 39 years. Health care providers who had longer duration of work as health care professionals would have a better understanding of the service experiences of health facilities in Ethiopia. Similarly, a reasonable distribution of respondents among the different duration of work groups would enable the study be more descriptive. In the study, the highest work experience of the respondents was in the range 10-19 years [202 (49.8%)], while the least was in the range 30-39 years [3 (0.7%)]. On the other hand, the highest work experience of the respondents as health professional in the current hospital ranged 6-9 years [247 (69.8%)], and the least was in the range 30-39 years [2 (0.7%)].

4.3.4. Profession

All health professionals who fulfilled the study inclusion criteria were included in the study. With this, the study was made representative of all health professions in the study hospitals. The highest number of respondents [304 (74.9%)] were nurses, followed by medical doctors [35 (8.6%)], and medical laboratory professionals [24 (5.9%)]. The least number of respondents were sanitarians [2 (0.5%)]. This indicated that results of the study were influenced by the nursing profession when compare to other health professions in the study hospitals.

Cross-tabulation of the gender and profession of the respondents showed strong association between medical doctor profession and male gender, and nurse profession and female gender (Table 4.4).

Table 4.4 Cross-tabulation of the gender and profession of respondents

		Profession, f (%)							
		MD	Lab	Pharm.	Nurse	HO	X-ray	Sanitary	Total
Gender	Male	32(25.8)	15(12.1)	9(7.3)	47(37.9)	9(7.3)	10(8.1)	2(1.6)	124(100)
	Female	3(1.1)	9(3.2)	7(2.5)	257(91.1)	5(1.8)	1(0.4)	0(0)	282(100)
Total		35(8.6)	24(5.9)	16(3.9)	304(74.9)	14(3.4)	11(2.7)	2(0.5)	406(100)

4.3.5. Level of education

All levels of education were included in the study, except PhD as there was no health professional in either of the study hospitals who holds a PhD. Though each level of education was represented by abundant respondents, the highest number of respondents' level of education [342 (84.2%)] was first degree, while the least was certificate [2 (0.5%)].

In summary, demographic data, which included age, gender, duration of work as health professional, duration of work as staff in the hospital, profession, and level of education, was collected from the respondents. This data was found to be relevant for analysis and interpretation of the various findings of the study.

4.4. RESULT I - THE EFFECTS OF BPR HEALTH CARE REFORM ON HEALTH SERVICE QUALITY, ACCESS, EQUITY, EFFICIENCY, AND SUSTAINABILITY

This section provides the findings of the study towards the perceived effects of the BPR health care reform on health service quality, access, equity, efficiency, and sustainability based on data collected from health care providers who were respondents of the study.

4.4.1. Quality

Investigation has been made to analyse the effect of the BPR health care reform to meeting the intended quality of health services in public hospitals. The investigation was guided by the three health care quality dimensions grounded in the study framework: structure-process-outcome. Reliability of the instrument regarding quality was ensured by conducting Cronbach's alpha test, which gives a value of 0.960.

4.4.1.1. Outcome

As shown in Table 4.5, 22 items were posed in the questionnaire to investigate quality outcomes of the BPR health care reform implemented in Addis Ababa, Ethiopia. The first eight items focused on patient-provider interaction, and they were constructed from the targets the AAHB had depicted in its reform document. The next four items evaluated outcomes in terms of documentation, monitoring and evaluation, and skill transfer. While the last nine items measured provider-management system interactions. The Cronbach's alpha test showed a satisfactory value of 0.958.

Under patient-provider interaction, the highest agreement was observed in delivery of medical certificates, where 237 (58%) respondents agreed that the implemented BPR health care reform enabled patients to obtain their medical certificate within an

hour as specified in the BPR document. While the lowest agreement was in bed appointments, where only 27 (6.1%) respondents agreed that the perceived time-limit (10 minutes) allotted in the BPR document for patients getting beds has not been met. One-hundred-eighty-four (45.3%) respondents agreed that the health care services they are providing based on the BPR health care reform are satisfying patients. Of those who agree, strong agreement was recorded for 27 (14.7%) respondents. Similarly, about half [213 (52.5%)] of the respondents agreed that the implemented BPR health care reform improves the treatment and respect patients are getting from hospital staffs. In general, according to the weighted median analysis made on responses regarding patient-provider interaction, 42% responses indicated that the implemented BPR health care reform didn't meet the perceived patients-provider interaction, while 41% responses showed the reverse and the remaining 17% responses were neutral.

Under the second component of the output measures which focused on documentation and progress monitoring and evaluation, only 102 (25.1%) respondents agreed that the reform allowed reporting systems of the hospitals to be easy and time-efficient. Besides, only 130 (32%) respondents agreed that hospital guidelines & protocols are up-to-date & appropriate. Under this section, a better level of agreement was observed in monitoring and evaluation where 181 (44.6%) respondents agreed that the reform established a better monitoring and evaluation system, while 131 (32.3%) disagreed, and 94 (23.2%) neutral. The detailed responses are summarized in Table 4.5.

In the third section which dealt with interaction between providers and the hospital's management system, respondents' feedback showed that the hospital staff were not promoted to a relatively higher position [246 (60.6%)] nor got recognition of their outstanding performance [255 (62.8%)] due to the health care reform. Besides, the reform didn't allow for increases in salary of staff [256 (63.1%)] nor created a better feeling of overall job satisfaction among staff [228 (56.2%)]. The relatively positive

input of the reform was on work relationship, in that the reform created better working relationship among staff [204 (50.2)] (Table 4.5). The overall analysis of findings indicates that provider-management system interaction of the hospitals is still weak.

In general, according to the weighted median descriptive statistics made on outcomes of quality using weighted median score from visual binning of the variables, 207 (51%) of the respondents argued that the BPR health care reform has brought improvements on hospital quality outcomes, while 199 (49%) indicated that there are no improvements.

Table 4.5 Descriptive analysis on quality of the health care reform outcomes

1. Perceived service quality			
1.1. Outcome	Agree f(%)	Neutral f(%)	Disagree f(%)
<i>Due to the BPR health care reform:</i>			
1.1.1. Out patients are completing treatment services within 2 hrs	144(35.5)	42(10.3)	220(54.2)
1.1.2. Emergency patients are receiving treatment immediately	232(57.1)	67(16.5)	107(26.4)
1.1.3. Patients are getting beds within 10 minutes	27(6.7)	38(9.4)	341(84)
1.1.4. Patients are receiving specialized services within 72 hours	199(49)	63(15.5)	144(35.5)
1.1.5. Customers are receiving medical certificate within 1 hr	237(58.4)	85(20.9)	84(20.7)
1.1.6. Patients satisfied with the hospital services	184(45.3)	114(28.1)	108(26.6)
1.1.7. Treatment & respect of patients improved	213(52.5)	79(19.5)	114(28.1)
1.1.8. Missing patients' medical records is rare	107(26.4)	66(16.3)	233(57.4)
% Patient-provider interaction	41%	17%	42%
1.1.9. Reporting systems are easy and not time consuming	102(25.1)	76(18.7)	228(56.2)
1.1.10. Guidelines & protocols are up-to-date & appropriate	130(32)	87(21.4)	189(46.6)
1.1.11. Opportunities to learn from successes/challenges created	190(29.6)	96(23.6)	120(46.8)
1.1.12. Up-to-date technologies for patient diagnosis are in use	150(36.9)	92(22.7)	164(40.4)
1.1.13. Monitoring & evaluation systems are established	181(44.6)	94(23.2)	131(32.3)
% Documentation & progress monitoring	37%	22%	41%
1.1.14. Staff developed good working relationship with each other	204(50.2)	82(20.2)	120(29.6)
1.1.15. Staff receive appropriate & timely performance feedback	131(32.3)	78(19.2)	197(48.5)
1.1.16. Staff have clear job description	188(46.3)	96(23.6)	122(30)
1.1.17. Staff get a better feeling of overall job satisfaction	111(27.3)	67(16.5)	228(56.2)
1.1.18. Staff are highly motivated to their work	96(57.4)	77(19)	233(23.6)
1.1.19. Staff salary increases	93(22.9)	57(14)	256(63.1)
1.1.20. Staff promoted to a relatively higher position	92(22.7)	68(16.7)	246(60.6)
1.1.21. Staff with outstanding performance are getting recognition	93(22.9)	58(14.3)	255(62.8)
1.1.22. Staff use their working hours appropriately	166(40.9)	59(14.5)	181(44.6)
% Staff-hospital management system interaction	32%	18%	50%
% Outcome	37%	18%	45%

4.4.1.2. Process

The second dimension of health care quality measured in this study was process. Eight items were included in the questionnaire to assess appropriateness of the methods and procedures followed in the implementation of the BPR health care reform. The Cronbach's alpha test conducted for reliability testing had a value of 0.921.

Among the major gaps in the reform implementation process was training. About 246 (60.6%) of the respondents claimed that adequate training had not been provided to all staff throughout the BPR implementation process. Regarding the composition of the reform team, the majority [166 (40.9)] of respondents argued that the right team members had not been assigned to process the reform, and 202 (49.8%) claimed that feedbacks from patients and data from pilot tests were not incorporated to the BPR. Only 68 (16.7%) respondents agreed that the health care reform process involved stakeholders on the new design and received their feedback (Table 4.6).

According to the overall analysis made on process of quality using weighted median score, 195 (48%) of respondents indicated that appropriate procedures have been followed in the processing of the BPR health care reform, while 211 (52%) of respondents indicated that appropriate procedures have not been followed to ensure of the reform implementation process.

Table 4.6 Descriptive analysis on quality of the health care reform implementation process

1. Perceived service quality		Agree f(%)	Neutral f(%)	Disagree f(%)
1.2. Process				
<i>In the BPR implementation process:</i>				
1.2.1.	Staff are able to clearly know the mission and vision of the hospital	218(53.7)	130(32)	58(14.3)
1.2.2.	Supervisors were coming from health bureau to monitor the reform effort	119(29.3)	156(38.4)	131(32.3)
1.2.3.	The hospital quality improvement goals were known throughout the case teams	199(49)	109(26.8)	98(24.1)
1.2.4.	Hospital employees were involved in developing plans for improving quality	165(40.6)	78(19.2)	163(40.1)
1.2.5.	Adequate training has been provided to all staff	109(26.8)	51(12.6)	246(60.6)
1.2.6.	Stakeholders were communicated on the new design and feedbacks received	68(16.7)	144(35.5)	194(47.8)
1.2.7.	Feedbacks from patients and data from pilot test were incorporated to the BPR	90(22.2)	114(28.1)	202(49.8)
1.2.8.	The right team members have been prepared to process the reform	117(28.8)	123(30.3)	166(40.9)
% Process		33%	28%	39%

4.4.1.3. Structure

Under health service quality scopes, the structural dimension was represented in the questionnaire through two items aimed at assessing improvements of the overall structure of the hospitals to meet the daily work flow due to the reform.

About 202 (49.8%) respondents positively agreed that because of the reform, the hospitals became better treatment facilities, and 322 (65%) agreed that the hospitals became conducive to the daily work flow (Table 4.7). According to the descriptive statistics of weighted median score, 52.5% of respondents argued that there is no

improvement in quality structure of the hospitals, while 47.5%) argued that there are improvements in structure.

Table 4.7 Descriptive analysis on quality of service structure

1. Perceived service quality 1.3. Structure		Agree f(%)	Neutral f(%)	Disagree f(%)
<i>Due to implementation of BPR health care reform:</i>				
1.3.1.	The way the hospital is structured is conducive to the daily work flow	161(39.7)	110(27.1)	135(33.3)
1.3.2.	The hospital becomes a better treatment facility	202(49.8)	136(33.5)	68(16.7)
% Structure		45%	30%	25%

4.4.1.4. Mann-Whitney and Kruskal Wallis analysis

The Mann-Whitney test run to statistically test if there were a significant difference between the answering tendencies of males and females on service quality shows that males and females have different scoring tendency ($p = 0.017$). Similarly, Kruskal Wallis analysis showed that the perceived response on service quality is different across the different age groups ($p = 0.003$), profession ($p = 0.022$), and duration of work within the hospital ($p = 0.003$). However, according to the Kruskal Wallis analysis conducted, the response on service quality was the same across the respondent's different level of education.

4.4.1.5. Weighted median score analysis

Based on descriptive analysis of the weighted median score regarding quality of health care services, 195 (48%) of respondents indicated that the public hospitals showed improvements on quality of health care services, while 211 (52%) of respondents indicated that there are no improvements in quality of health care services due to implementation of the BPR health care reform. The cumulative result

regarding service quality indicated that the effect of the BPR health care reform on improving health service quality was low.

4.4.2. Access

The study investigated whether there was an association between the BPR health care reform and improvements in health care access. A sum of 25 items was included in the questionnaire to investigate whether the implemented health care reform improved health care access in the hospitals. The investigation was made based on the five dimensions of health care access, such as physical, economic, temporal, cultural, and approachability dimensions, as indicated in the grounded theory of the study. The instrument's Cronbach's alpha test result regarding access was 0.960.

4.4.2.1. Physical dimension

The physical dimension of the study assessed availability of enough work space, furniture, equipment, supplies, medications, reagents, communication materials, and other supplies in the hospitals after implementation of the BPR health care reform.

About half [206 (50.7%)] respondents indicated that the reform enabled the hospitals organized with case teams that have well-defined rooms or spaces adequate to the daily work flow. Yet, according to the respondents, there were other physical barriers which were compromising their day-to-day activities. The respondents claimed that after implementation of the reform, the hospitals still lack to have enough office furniture [227 (55.9%)], stationery materials [238 (58.6%)], and reagents and drugs [215 (53%)]. Besides, the hospitals had not secured conducive staff rest rooms [266 (65.5%)] and clean work areas [192 (47.3%)].

Implementation of the BPR health care reform didn't empower the hospitals to get equipped with internet services [332 (81.8%)], functioning computers [343 (56%)],

and a functioning landline telephone to call within and outside the hospital [239 (58.9%)]. Preventive and curative maintenance of diagnostic equipment were also described as ineffective. Only 39 (9.6%) respondents agree that scheduled equipment preventive maintenance services are in place, and only 77 (19%) respondents agree that there is an adequate maintenance service when a diagnostic machine fails.

The overall finding indicated that implementation of the BPR health care reform initiative was unable to address the shortages or absence of critical furniture, supplies and infrastructure that are highly needed for the hospitals' day-to-day services. Of the total responses analysed, only 29% agreed that the implemented health care reform positively addressed physical dimensions of health care access. Table 4.8 summarizes the respondents' reactions to the perceived physical dimension of health care access.

Table 4.8 Descriptive statistics on physical dimensions of access

2. Perceived access				
2.1. Physical Dimension		Agree	Neutral	Disagree
		f(%)	f(%)	f(%)
<i>After the BPR health care reform, the hospital has:</i>				
2.1.1.	Defined room/spaces for each case team	206(50.7)	94(23.2)	106(26.1)
2.1.2.	Enough office furniture	140(34.5)	39(9.6)	227(55.9)
2.1.3.	Enough stationery materials	128(31.5)	40(9.9)	238(58.6)
2.1.4.	Enough reagents/drugs/supplies to perform daily activities	111(27.3)	80(19.7)	215(53.0)
2.1.5.	Clean work area	118(29.1)	96(23.6)	192(47.3)
2.1.6.	Conducive staff rest room	67(16.5)	73(18)	266(65.5)
2.1.7.	Functioning computers as needed	154(37.9)	62(15.3)	190(46.8)
2.1.8.	Internet access	46(11.3)	28(6.9)	332(81.8)
2.1.9.	Backup generator	251(61.8)	103(25.4)	52(12.8)
2.1.10.	A functioning land line telephone to call within and outside the hospital	98(24.1)	69(17)	239(58.9)
2.1.11.	Adequate maintenance service when a diagnostic machine fails	77(19)	85(20.9)	244(60.1)
2.1.12.	A scheduled equipment preventive maintenance services	39(9.6)	107(26.4)	260(64)
% Physical dimension		29%	18%	53%

4.4.2.2. Economic dimension

The economic dimension of the questionnaire was constructed to examine the overall effect of the BPR health care reform on financing and financial management system of the hospitals.

About 141 (34.7%) respondents agreed that efficient and effective health care financing systems are in place after implementation of the reform, while 81(20%) disagree and majority [184 (45.3%)] were neutral. About 123 (30.3%) respondents agreed that the hospitals are now able to mobilize their financial resources through

evidence-based plans, while 148 (36.5%) disagree and 135 (33.3%) were neutral. Yet, 165 (40.6%) respondents claimed that corruption suspects in the hospitals still exist. In general, 37% responses agreed that there were improvements in economic dimensions of the hospitals, 27% disagree and 36% were neutral (Table 4.9).

Table 4.9 Descriptive analysis on economic dimensions of access

2. Perceived access				
2.2 Economic dimension		Agree f(%)	Neutral f(%)	Disagree f(%)
<i>After implementation of BPR health care reform:</i>				
2.2.1.	Efficient and effective health care financing system has been established	141(34.7)	184(45.3)	81(20)
2.2.2.	Financial mobilization is linked with evidence-based plan	123(30.3)	135(33.3)	148(36.5)
2.2.3.	Hospital income increased	207(51)	162(39.9)	37(9.1)
2.2.4.	Budget consumption becomes effective	142(35)	151(37.2)	113(27.8)
2.2.5.	Corruption suspects decreased	144(35.5)	97(23.9)	165(40.6)
% Economic dimension total		37%	36%	27%

4.4.2.3. Temporal dimension

The temporal dimension of access evaluated the effect of the BPR health care reform on improving turn-around-time of the hospital's health care services. Three items were included in the questionnaire to analyse the temporal dimension (Table 4.10).

About 223 (54.9%) respondents indicated that patients received hospital services on time. Besides, 216 (53.2%) respondents argued that there are improvement in patient's appointment time, and 219 (53.9%) responded that patients are spending reasonable time waiting their turn at hospital receptions.

The overall result in this category showed that implementation of the BPR health care reform reasonably addressed temporal dimensions of health care reform performance measures, with 54% level of agreement out of the total responses.

Table 4.10 Descriptive analysis of temporal dimensions of access

2. Perceived access				
2.3 Temporal dimension		Agree f (%)	Neutral f (%)	Disagree F (%)
<i>After implementation of BPR health care reform:</i>				
2.3.1.	Patients receive hospital services on time	223(54.9)	81(20)	102(25.1)
2.3.2.	Patients' appointment wait-time is reasonable	216(53.2)	81(20)	109(26.8)
2.3.3.	Patients' time spent while waiting in reception is reasonable	219(53.9)	72(17.7)	115(28.3)
% Temporal dimension total		54%	19%	27%

4.4.2.4. Cultural dimension

In the cultural dimension of health care access, the researcher was able to assess acceptability of the hospitals' services as defined in the grounded theory of the study.

About half of the respondents [224 (55.2%)] concurred that the implemented health care reform enabled patients receive health care services using a mode of communications suitable to them. On the other side, the majority of respondents [338 (83.3%)] agreed that there is no patient discrimination in the hospitals since the reform has been implemented, and this was the highest ever recorded score in the study. The overall analysis revealed that the implemented BPR health care reform was reasonably capable of addressing the cultural dimensions of health care reform performance, with only 95 (0.6%) level of disagreement out of the total number of responses recorded. Results of the cultural dimensions of access are summarized in Table 4.11.

Table 4.11 Descriptive analysis of cultural dimensions of access

2. Perceived access			
2.4. Cultural dimension	Agree f(%)	Neutral f(%)	Disagree f(%)
<i>After implementation of BPR health care reform:</i>			
2.4.1. Patients receive hospital services using languages and mode of communication suitable to them	224(55.2)	110(27.1)	72(17.7)
2.4.2. There is no patient discrimination	338(83.3)	45(11.1)	23(5.7)
Cultural dimension total	69%	19%	0.6%

4.4.2.5. Approachability dimension

The last component under the perceived access where data was collected and analysed was approachability dimension. This dimension assessed the effect of the BPR health care reform on improving awareness of the community that some form of health services exists, can be reached, and have an impact on their health.

About 157 (38.7%) respondents argued that the hospitals have established a system that advocates the hospitals' services to end users. About half of the respondents agreed that the community is aware of the hospitals' services, and a similar amount agreed that the community understood the values of the hospitals towards their health.

The overall finding of the section showed that the BPR health care reform didn't effectively address the approachability dimensions of health care reform performance (Table 4.12).

Table 4.12 Descriptive analysis of approachability dimensions of access

2. Perceived access				
2.5. Approachability dimension		Agree f(%)	Neutral f(%)	Disagree f(%)
<i>After implementation of BPR health care reform:</i>				
2.5.1. The hospital establishes a system of advocating its services to the community		157(38.7)	136(33.5)	113(27.8)
2.5.2. The community is aware of the hospital's services		213(52.5)	131(32.2)	62(15.3)
2.5.3. The community understands the value of the hospital on their health		204(50.2)	140(34.5)	62(15.3)
Approachability dimension total		47%	33%	20%

4.4.2.6. Weighted median score analysis

According to analysis of the total weighted median score of the five dimensions of health care access, 50% of the respondents revealed that there are improvements on health care access due to implementation of the BPR health care reform.

4.4.3. Equity

This section assessed availability of adequate resources and systems in the hospitals that would fairly benefit every citizen. Based on the grounded theory of the study, four key items that would critically measure health care equity concerns were included in the questionnaires.

Results of this section indicated that the hospitals are giving medical services with reasonable prices (Table 4.13). Analysis of the findings also confirmed that the hospitals gave free services for patients who cannot afford it. Above all, analysis of the response [284 (70%)] indicated that patients with different socio-economic, demographic, ethnic, and/or gender groups have equal access to the hospitals' services.

Table 4.13 Descriptive analysis of health care equity

3. Perceived equity			
3.1. Equity dimension	Agree f (%)	Neutral f (%)	Disagree f (%)
<i>After implementation of BPR health care reform:</i>			
3.1.1. Amount of money patients pay for getting hospital services is reasonable	281(69.2)	98(24.1)	27(6.7)
3.1.2. The hospital gives free services for patients who cannot afford	343(84.5)	35(8.6)	28(6.9)
3.1.3. The hospital has appropriate infrastructure setup for disabled patients	115(28.3)	43(10.6)	248(61.1)
3.1.4. Patients with different socio-economic, demographic, ethnic, and/or gender groups have equal access to the hospital services	284(70)	89(21.9)	33(8.1)
% Equity total	63%	16%	21%

4.4.3.1. Weighted median score analysis

Based on analysis of weighted median score, 61% of respondents agree that health care equity has been improved due to implementation of BPR health care reform, while 39% disagree.

4.4.4. Efficiency

The efficiency components of the study assessed the technical, economic and allocative processes related to how and which services are produced in the health care reform process. Twelve items were included in the questionnaire to collect and analyse data pertaining to efficiency.

About 175 (43.1%) respondents agreed that the best use of economic resources has been achieved in the reform implementation process. While about 181 (44.6%)

respondents agree that enough and competent health care workers were in place in the reform implementation process.

About 179 (44%) of the study respondents argued that the role and capacity of the hospitals' high level management in the reform implementation process was insufficient. As replied by 234 (21%) respondents, high-level management of the hospitals didn't enrich knowledge and technical competency of the staff to implement the BPR health reform (Table 4.15).

In general, 199 (49%) respondents agree that there are improvements in efficiency of health care services due to implementation of the BPR health care reform, while 207 (51%) disagree that the reform didn't improve efficiency of health care services.

Table 4.15 Descriptive analysis of health care efficiency

4. Perceived efficiency			
4.1. Technical, economic and allocative dimensions	Agree f (%)	Neutral f (%)	Disagree f (%)
<i>In the BPR health care reform implementation process:</i>			
4.1.1. The best use of resources is observed	175(43.1)	128(31.5)	103(25.4)
4.1.2. Wastage reduced and cost-effective interventions enhanced	168(41.4)	76(18.7)	162(39.9)
4.1.3. Enough and competent health care workers and administrators are in place	181(44.6)	98(24.1)	127(31.3)
4.1.4. Sufficient rooms are in place	173(42.6)	98(24.1)	135(33.3)
4.1.5. Enough drugs and medical supplies, medical apparatuses and equipment	146(36)	104(25.6)	156(38.4)
4.1.6. The staff have adequate knowledge on BPR objectives and principles	141(34.7)	119(29.3)	146(36)
4.1.7. The staff is technically competent to implement the BPR reform	141(34.7)	117(28.8)	148(36.5)
4.1.8. Supervisors assigned according to the BPR reform structure are capable and qualified	141(34.7)	83(20.4)	182(44.8)
4.1.9. There is a clear channel of communication at workplace	176(43.3)	51(12.6)	179(44.1)
4.1.10. Top management is competence to support the BPR reform	166(40.9)	61(15)	179(44.1)
4.1.11. Top management involves the technical staff in decision making	153(37.7)	55(13.5)	198(48.8)
4.1.12. Hospital management facilitates job-related training to staffs when necessary	142(35)	43(10.6)	221(54.4)
% Efficiency	39%	21%	40%

4.4.5. Sustainability

The study investigated the effect of the BPR health care reform to ensuring sustainability of the hospitals' services to continue functioning and initiate changes

so as to continuously improve performance. Nine relevant items were included in the questionnaire and responses analysed (Table 4.16).

Based on analysis of weighted median score, 192 (47.3%) respondents agree that the reform improved sustainability, while 214 (52.7%) of respondents disagree that the reform improved sustainability of the public hospitals.

Table 4.16 Descriptive analysis of health care sustainability

5. Perceived Sustainability			
5.1. Sustainability dimension	Agree	Neutral	Disagree
	f(%)	f(%)	f(%)
<i>After implementation of BPR health care reform:</i>			
5.1.1. The hospital management is committed to maintain the BPR reform	187(46.1)	143(35.2)	76(18.7)
5.1.2. The hospital is able to continuously improve performance	199(49)	108(26.6)	99(24.4)
5.1.3. The hospital acquires the required financial resources to insure sustainability	181(44.6)	125(30.8)	100(24.6)
5.1.4. The hospital acquires the required qualified staff to insure sustainability	170(41.9)	129(31.8)	107(26.4)
5.1.5. The hospital networking with external partners is strengthened	122(30.0)	163(40.1)	121(29.8)
5.1.6. The hospital has the capacity to assemble and manage resources	150(36.9)	130(32.0)	126(31.0)
5.1.7. The hospital increases satisfaction of patients and providers with clinical or administrative services	170(41.9)	93(22.9)	143(35.2)
5.1.8. community-level partnerships are maintained	129(31.8)	152(37.4)	125(30.8)
5.1.9. new organizational practices and policies are sustained	118(29.1)	165(40.6)	123(30.3)
% Sustainability	69%	33%	28%

4.4.6. Mann-Whitney and Kruskal-Wallis analysis of variance

The Mann-Whitney test run to statistically testing if there was a significant difference between the answering tendencies of males and females on improvements in health system performance shows that males and females have the same scoring tendency at the 5% level ($p = 0.012$). Analysis of Kruskal-Wallis test indicates that there were difference in scoring tendency between respondents with different health profession ($p = 0.001$) and respondents with different duration of work in the hospitals ($p = 0.026$). Meanwhile, there were differences in scoring tendency between respondents with different levels of education ($p = 0.539$) and between respondents with different age groups ($p = 0.235$)

4.4.7. Summary

Based on the overall weighted median score result, 203 (50%) respondents agree that the implemented BPR health care reform was effective in improving the health care system performance of public hospitals, while the other half disagree that the reform didn't improve health system performance.

According to the findings of this study, the overall effectiveness of the BPR health care reform in improving quality of health care services was far behind the perceptions; with both dimensions of health service quality, such as outcome, process, and structure, revealed an agreement score less than 50%. A higher rate of patient appointment time and longer waiting time on receptions and inequity for disabled patients continued to challenge the health care delivery system of the hospitals. Disrupting all these status quos requires a better strategy which is capable of reinforcing patient-centred quality of care services across all the public health care sectors.

Besides, filling the several gaps perceived in the implementation process of the BPR health care reform and the issues on sustainability of the hospitals' services could lead to initiation of a new health care reform in the hospitals.

4.5. RESULT II: FACTORS INFLUENCING IMPLEMENTATION OF BPR HEALTH CARE REFORM IN ADDIS ABABA, ETHIOPIA

In this section, the researcher identifies, analyses, and presents factors that influence implementation of the BPR health care reform in Addis Ababa, Ethiopia.

4.5.1. Approach

An in-depth review of literature has been made to identify critical factors that could influence the success of BPR programs. As a result, the causal model of BPR critical success factors proposed by Jamali et al (2011:355) was adopted and six BPR critical success factors identified. The factors identified were adequate financial resources, top management commitment and support, training, collaborative working environment, flatter structure, and IT. These factors have been used as a guide in identifying and analysing the factors that influence implementation of the BPR health care reform in Addis Ababa, Ethiopia.

The source of data used to meet this objective were the health care providers' responses to selected items in the study questionnaire. The item stating "the hospital becomes a better treatment facility" was taken as the outcome variable to indicate whether or not there was hospital service improvement. This item had original responses classified in Likert scale. The responses were dichotomized into "Good" or "Poor" answers by taking the "Strongly agree" and "Agree" responses as a "Good" value while "Strongly disagree", "Disagree", and "Neutral" as "Poor" value.

On the other side, the six BPR critical success factors were taken as the explanatory variables. For each of the six success factor, three items which best describe the factor were pooled from the questionnaire and the responses given to the items by health care providers analysed as a cumulative effect. A respondent's response was

taken as “Good” value if at least two of the three items had a “Strongly agree” or “Agree” response in the original Likert scale questionnaire, while the remaining responses were taken as “Poor” value. The six critical success factors and the items included under each factor are summarized in Table 4.17.

Table 4.17 BPR critical success factors and their items

Adequate financial resources
Increase in hospital's income
The required financial resources
Efficient and effective health care financing system
Top management commitment and support
Top management commitment to maintain the BPR reform
Top management competence to support the BPR reform
Top management concern to engage technical staff in decision making
Training needs
Staff have adequate knowledge on BPR objectives and principles
Staff are technically competent to implement the BPR reform
Staff received adequate training
Collaborative working environment
A good working relationship among staffs
Enough and competent technical and administration staff
Opportunities to learn from successes and challenges
Flatter structure
Staff involved in developing plans for improving quality
The right team members were structured to process the reform
Clear channel of communication in place
Information technology
Functioning computers in place for IT
Enough internet access
Easy and time-efficient reporting systems

Associations of health service improvement with the six explanatory variables were tested independently using bivariate analysis. Based on the result, all the independent variables were selected for the logistic regression analysis. Subsequently, multivariate logistic regression analysis has been conducted to exclude confounders.

4.5.2. Results of logistic regression analysis

The variables, such as adequate financial resources, top management commitment and support, training, collaborative working environment, flatter structure, and Information Technology showed statistical significance in the bivariate analysis (Chi-square test) at a 5% level of significance. Consequently, the multivariate logistic regression analysis which controls the undesirable effects of confounding variables was used by taking all the six predictor variables into account. The backward stepwise regression which controls the problem of multicollinearity was employed and adequate financial resources, top management commitment and support, collaborative working environment, and Information Technology remained to be significantly and independently associated with health service improvement. While the remaining two predictor variables, namely, training and flatter structure, had no association with health service improvement (Table 4.18).

The bivariate analysis (Chi-square test) showed a significant association between financial resources and health service improvement ($p < 0.001$). Looking into the Adjusted Odds Ratio (AOR), availability of adequate financial resources was 3.54 times more likely to enable the BPR health care reform to improve health services as compared to inadequate financial resources ($p < 0.001$, AOR=3.54, 95%CI: 1.97, 6.33).

Similarly, the bivariate analysis showed a significant association between top management commitment and support and health service improvement (p-

value<0.001). Committed and supportive top management was more likely to strengthen the BPR health care reform and enable health service improvement as compared to uncommitted and unsupportive top management ($p < 0.018$, AOR=2.27, 95%CI: 1.15, 4.47).

The bivariate analysis also showed a significant association between collaborative working environment and health service improvement ($p < 0.001$, COR=5.71, 95%CI: 3.71, 8.79). Availability of a collaborative working environment is more likely to enable the BPR health care reform improve health services as compared to an unfriendly working environment ($p < 0.05$, AOR=1.77, 95%CI: 1.00, 3.11).

In the bivariate analysis, flatter structure had significant association with health service improvement ($p < 0.001$, COR=10.65, 95%CI: 6.66, 17.05). However, the multivariate logistic regression analysis indicated that flatter structure has no significant association with health service improvement ($p = 0.92$, AOR=1.80, 95%CI: 0.91, 3.55).

Information technology has also had significant association with health service improvement ($p < 0.001$, COR=13.70, 95%CI: 7.75, 24.18). Looking into the magnitude of the association, availability of information technology was more likely to improve health services as compared to its unavailability ($p < 0.001$, AOR=3.15, 95%CI: 1.57, 6.32).

Training had significant association with health service improvement in the bivariate analysis ($p < 0.001$, COR=10.66, 95%CI: 6.56, 17.35). However, according to the multivariate logistic regression analysis, training has no significant association with health service improvement ($p = 0.92$, AOR=1.80, 95%CI: 0.91, 3.55).

Table 4.18 Logistic regression analyses of the relative effect BPR critical success factors on health service improvement

Factors		Health care services		df	Sig.	Crude OR (95%CI)	Adjusted OR (95%CI)
		Improved	Not improved				
Adequate financial resources	Poor	145	35	1	.000*	1 ^R	3.54 (1.97, 6.33)
	Good	59	167				
Top management commitment and support	Poor	162	49	1	.018*	1 ^R	2.27 (1.15, 4.47)
	Good	42	153				
collaborative working environment	Poor	155	72	1	.050*	1 ^R	1.77 (1.00, 3.11)
	Good	49	130				
Flatter structure	Poor	169	63	1	.092	1 ^R	1.80 (.91, 3.55)
	Good	35	139				
Information Technology	Poor	187	90	1	.001*	1 ^R	3.15 (1.57, 6.32)
	Good	17	112				
Training	Poor	175	73	1	.218	1 ^R	**
	Good	29	129				

*Significant at 0.050

**AOR not calculated as the variable had insignificant association in the bivariate analysis

4.6. RESULT III: THE RELATIONSHIP BETWEEN BPR HEALTH CARE REFORM AND HEALTH CARE PROVIDER'S JOB SATISFACTION

The study examined the relationship between the BPR health care reform and public health care providers' job satisfaction in Addis Ababa, Ethiopia.

4.6.1. Approach

The measurement tool was developed based on the framework proposed by Faye et al (2013:7) and used to retrieve the data relevant to the study. The framework consisted of a multidimensional instrument whose content, construct and criterion validities were verified to ensure its suitability for the sub-Saharan African context. The framework involved eight domains of job satisfaction, namely: continuing education, salary and benefits, management style, tasks, work environment, workload, moral satisfaction, and job stability. Each domain was represented by an item, and the overall job satisfaction was a composite of the eight items. Table 4.19 summarizes the job satisfaction measurement approach.

Table 4.19 Job satisfaction dimensions and their items

Job satisfaction dimensions	
Continuing education:	Hospital management facilitates job-related training to staffs when necessary
Task:	Staff have a clear job description that describes their routine duties in detail
Salary:	Staff salary increases
Work load:	Enough and competent health care workers and administrators are in place
Management style:	Management involves the technical staff in decision making)
Job stability:	Efficient and effective health care financing system has been established
Work environment:	The way the hospital is structured is conducive to the daily work flow
Moral satisfaction:	Staff are highly motivated to their work

The items were designed on a five-point Likert-type scale of agreement. Responses to the items were coded on a scale from 1 (strongly disagree) to 5 (strongly agree) and analysed numerically. The five scales were converted into a 0-to-100 scale by utilizing a Likert's transformation formula (Liu, Wang & Lu:2010:2):

$$\text{adjSS} = 100 \times \frac{\text{stdSS}-1}{5-1}$$

Where "adjSS" and "stdSS" are "adjusted satisfaction score" and "standard satisfaction score" respectively. With this scoring method, job satisfaction fell into 5

categories: "extremely dissatisfied" (adjSS: 10-29), "dissatisfied" (30-49), "generally satisfied or not" (50-59), "satisfied" (70-89), and "extremely satisfied" (90-100).

Job satisfaction predictors were identified by computing overall job satisfaction score with job satisfaction domains. The questionnaire included an item "better feeling of overall job satisfaction" to measure respondents' opinion regarding the overall job satisfaction resulted in the hospitals due to the BPR health care reform. This item had original responses classified in Likert scale. The responses were dichotomized into "Job Satisfied" or "Job dissatisfied" answers by taking the "Strongly agree" and "Agree" responses as a "Job Satisfied" value while "Strongly disagree", "Disagree", and "Neutral" as "Job Unsatisfied" value. The output was used as the dependent variable to run logistic regression analysis to examine the correlation of job satisfaction with the domains of job satisfaction.

Descriptive analyses were performed to provide background information on the sample. Non-parametric tests, such as the Mann-Whitney U test and Kruskal-Wallis test were conducted to analyse the association between job satisfaction and its predictors.

4.6.2. Reliability analysis

Kaiser-Meyer-Olkin (KMO) test was conducted to ensure adequacy of sample size for factor analysis. The test gives a value of .795, which indicates that the sample size was statistically significant for factor analysis (Table 4.20). The reliability of the questionnaire was assured by obtaining Cronbach's alpha of 0.832.

Table 4.20 KMO and Bartlett's Tests

KMO and Bartlett's Test		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy		.795
Bartlett's Test of Sphericity	Approx. Chi-Square	1463.690
	df	28
	Sig.	.000

4.6.3. Exploratory Factor Analysis

Exploratory Factor Analysis (EFA) was conducted to determine the most significant factor of job satisfaction among the eight job satisfaction domains. The result indicated that 75% of the variant has been explained by 3 variables.

4.6.4. Job satisfaction scores

The median and mean job satisfaction score of all the respondents were 50 and 49 respectively on a scale 1-100, which was equivalent to "Job dissatisfied" on Likert scale. From the 5 Likert categories: 133 (32.8%) were extremely dissatisfied, 169 (41.6%) generally satisfied or not, 91 (22.4%) satisfied, and 13 (3.2%) extremely satisfied.

4.6.5. Kruskal-Wallis analysis

Analysis of the Kruskal-Wallis test indicated that there is a significant difference in job satisfaction among the five study hospitals ($\chi^2 = 30.557, p < 0.001$). (Table 4.21 and Table 4.22).

Table 4.21 Kruskal-Wallis test rank summary of job satisfaction among the study hospitals

Hospital	Frequency	Rank	
		Mean rank	Sum of ranks
1	72	228.44	16447.68
2	56	225.27	12615.12
3	99	227.87	22559.13
4	71	156.08	11081.68
5	108	184.42	19917.36
Total	406	203.50	82620.97

Table 4.22 Kruskal-Wallis test analysis of job satisfaction among the study hospitals

Test statistics	
N	406
Median	50.00
Chi-Square	30.557
df	4
Asymp. Sig	.000

4.6.6. Descriptive analysis

The frequency and percentage scores of domains of job satisfaction are shown in Table 4.23.

Of the total 406 health care providers who responded to the questionnaire, 221 (54.4%) respondents claimed that there were no improvements in instituting continuing education programs in the hospitals. On the other hand, 188 (46.3%), respondents agreed that there were task flow systems in the hospitals that clearly describe in detail job descriptions of staff. Two-hundred-fifty-six (63.1%) respondents

argued that salary increment has not been made in line with the BPR health care reform. While 181 (44.6%) respondents agreed that there are improvements in staff work loads.

Regarding the existing management style, 198 (48.8%) respondents argued that the management system of the hospitals is not participatory. Only 96 (23.6%) respondents agreed that staff motivation has been increased due to the reform.

Table 4.23 Results based on dimensions of job satisfaction

Job satisfaction dimensions and their items	Level of agreement		
	Agree f (%)	Neutral f (%)	Disagree f (%)
Continuing education:	142(35)	43(10.6)	221(54.4)
Task:	188(46.3)	96(23.6)	122(30)
Salary:	93(22.9)	57(14)	256(63.1)
Work load:	181(44.6)	98(24.1)	127(31.3)
Management style:	153(37.7)	55(13.5)	198(48.8)
Job stability:	141(34.7)	184(45.3)	141(34.7)
Work environment:	161(39.7)	110(27.1)	135(33.3)
Moral satisfaction:	96(23.6)	77(19)	233(57.4)
Total % score	36%	22%	42%

Due to the health care reform, health care providers achieved an overall job satisfaction mean score of 2.87/5. Comparing mean scores of the eight job satisfaction dimensions, the highest mean scores were reached in workload (3.19) followed by task (3.18), while the lowest mean scores were observed in salary (2.35), followed by moral satisfaction (2.46) (Figure 4.1).

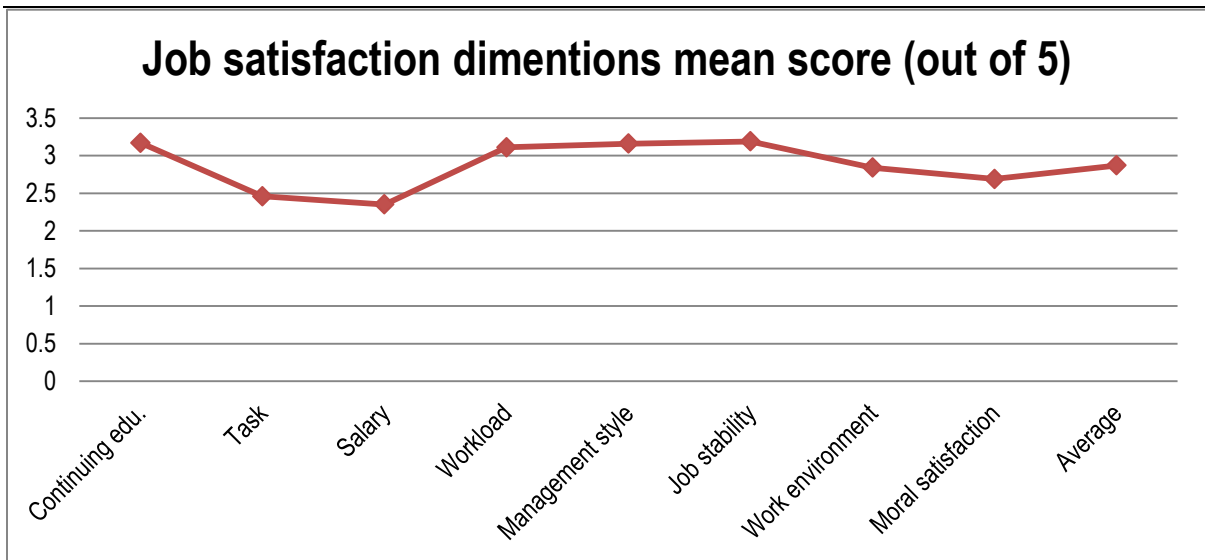


Figure 4.1 Job satisfaction by dimensions

4.6.7. Demographic characteristics associated with job satisfaction

Analysis of the Kruskal-Wallis test indicated that gender, age, duration of work as a health professional, duration of work within the hospitals, profession, and level of education had no significant influence on job satisfaction ($p = .099, .684, .761, .105, .144, \text{ and } .309$ respectively).

Comparing job satisfaction among professions, the highest mean scores of satisfaction were observed in pharmacy profession (3.38/5) followed by health officers (3.17/5), while the lowest mean scores of satisfaction were observed in X-ray professionals (2.34/5), followed by nurses (2.82/5). Figure 4.2 described the % mean score of job satisfaction among the different professions.

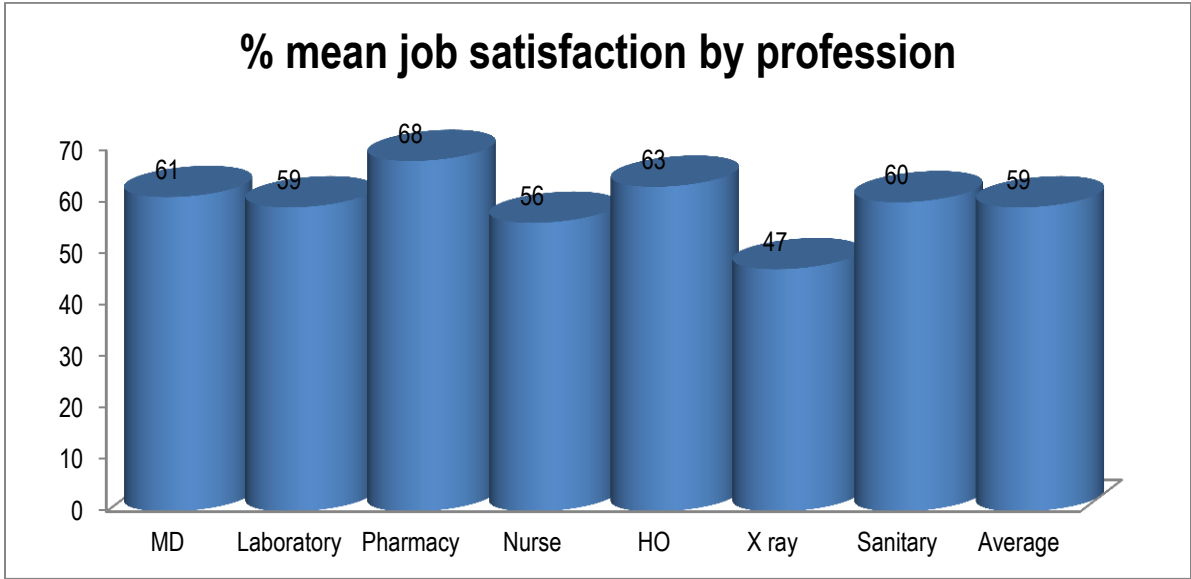


Figure 4.2 Cross-tabulation of job satisfaction by profession

The detailed results regarding distribution of professions among each dimension of job satisfaction are described in Table 4.24.

Table 4.24 Results on dimensions of job satisfaction among professions

Job satisfaction	Mean score by profession							Total
	MD	Laboratory	Pharmacy	Nurse	HO	X ray	Sanitary	
Continuing education	3.17	2.92	3.31	3.16	3.79	2.91	4.00	3.17
Task	2.57	2.50	3.19	2.39	2.79	2.36	2.50	2.46
Salary	2.71	2.38	2.56	2.30	3.07	1.45	2.00	2.35
Workload	3.00	2.79	3.81	3.11	3.57	2.73	2.50	3.11
Management style	3.37	3.29	3.25	3.12	3.57	2.64	3.50	3.16
Job stability	3.49	3.58	3.56	3.14	2.86	2.64	3.50	3.19
Work environment	3.09	3.21	3.81	2.77	2.71	2.00	3.00	2.84
Moral satisfaction	3.03	3.08	3.56	2.58	3.00	2.00	3.00	2.69
Total	3.05	2.97	3.38	2.82	3.17	2.34	3	2.87

Comparing job satisfaction among the different age groups, the highest mean scores of job satisfaction were observed in the age category 40-49 years [3.04/5 (61%)], while the mean scores of the other age categories was similar. Job satisfaction of respondents by their age category is summarized in Figure 4.3.

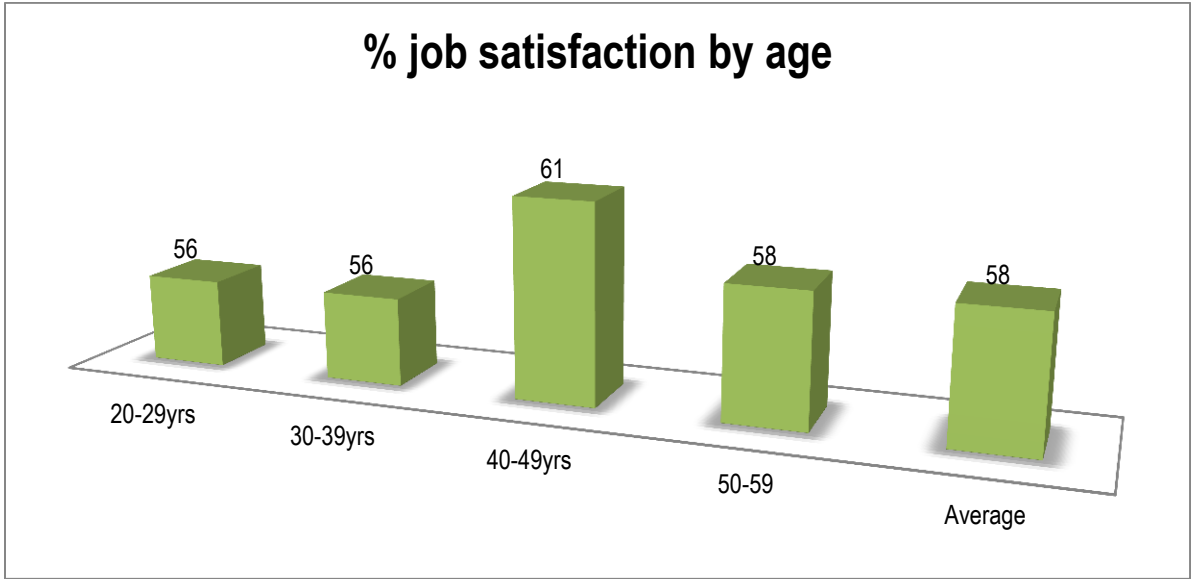


Figure 4.3 Cross-tabulation of job satisfaction by age

Table 4.31 summarized findings of the study regarding distribution of age categories among each dimension of job satisfaction.

Table 4.25 Results on dimensions of job satisfaction among the different age categories

Job satisfaction	Mean score by Age				Total
	20-29	30-39	40-49	50-59	
Continuing education	2.95	3.11	3.48	3.35	3.17
Task	2.37	2.34	2.85	2.35	2.46
Salary	2.11	2.30	2.67	2.50	2.35
Workload	3.11	3.11	3.12	3.15	3.11
Management style	3.18	3.15	3.18	3.00	3.16
Job stability	3.15	3.18	3.29	3.04	3.19
Work environment	2.92	2.71	3.01	2.92	2.84
Moral satisfaction	2.78	2.59	2.71	3.00	2.69
Total	2.82	2.81	3.04	2.91	2.87

Results regarding % of job satisfaction among participants that were categorized under their years of service they had within the current hospital is summarized in Figure 4.4.

Comparing job satisfaction among the four years of service categories, health care providers with a work experience of 30-39 years within the current hospitals had the highest mean score in job satisfaction [3.81/5 (76%)], while those with a work experience 6-9 years had the lowest mean score in job satisfaction [2.79/5 (56%)] (Figure 4.4).

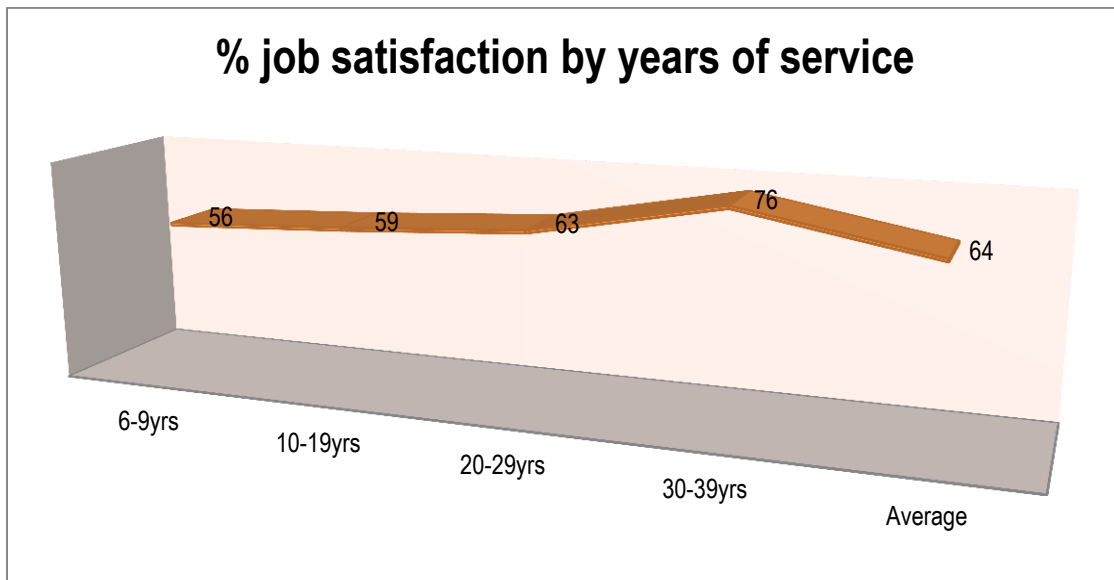


Figure 4.4 Cross-tabulation of job satisfaction by years of service within the hospitals

Table 4.26 summarized findings of the study regarding participants' years of service within the hospitals among each dimension of job satisfaction.

Table 4.26 Results on dimensions of job satisfaction among the different service year

Job satisfaction	Mean score by years of service in the hospitals				Total
	6-9yrs	10-19yrs	20-29yrs	30-39yrs	
Continuing education	3.10	3.24	3.71	2.50	3.17
Task	2.38	2.47	3.29	3.50	2.46
Salary	2.19	2.53	2.95	3.50	2.35
Workload	3.09	3.14	3.05	5.00	3.11
Management style	3.15	3.19	3.00	3.50	3.16
Job stability	3.09	3.39	3.14	3.50	3.19
Work environment	2.72	2.96	3.33	4.50	2.84
Moral satisfaction	2.60	2.79	2.86	4.50	2.69
Total	2.79	2.96	3.17	3.81	2.87

The mean job satisfaction of score of male and female was 3/5 (60%) and 2.8/5 respectively. Table 4.27 summarized findings of the study regarding participants' gender among each dimension of job satisfaction.

Table 4.27 Results on dimensions of job satisfaction among gender groups

Job satisfaction	Mean score by gender		Total
	Male	Female	
Continuing education	3.29	3.12	3.17
Task	2.62	2.39	2.46
Salary	2.55	2.27	2.35
Workload	3.05	3.14	3.11
Management style	3.20	3.14	3.16
Job stability	3.28	3.15	3.19
Work environment	3.06	2.74	2.84
Moral satisfaction	2.99	2.56	2.69
Total	3	2.8	2.9

4.6.8. Predictors of job satisfaction

Table 4.19 presented eight independent variables of job satisfaction. In the bivariate logistic regression analysis, continuing education, task, salary workload, management style, job stability, work environment, and moral satisfaction showed statistical significant association with job satisfaction. All the eight independent variables had significant associations with job satisfaction at a 5% level of significance. However, in the backward stepwise multivariate logistic regression analysis, only four variables have shown significant and independent association with job satisfaction, which were task ($p < .001$, AOR=5.491, 95%CI: 2.307, 13.069), workload ($p < 0.072$, AOR=2.422, 95%CI: 0.925, 6.342), management style ($p < 0.006$, AOR=4.017, 95%CI: 1.490, 10.828), and moral satisfaction ($p < 0.001$, AOR=177.654, 95%CI: 59.539, 530.08). While the remaining four predictor variables, namely, continuing education, salary, job stability, and work environment

had no association with job satisfaction in the multivariate logistic regression analysis (Table 4.28).

Table 4.28 Predictors of job satisfaction

Predictors		Frequency		Job satisfaction		Crude OR (95%CI)	Adjusted OR (95%CI)
		Dissatisfied	Satisfied	df	Sig.		
Continuing education	Poor	39	225	1	.906	1 ^R	
	Good	72	70			5.934 (3.697, 9.524)	1.083 (0.291, 4.029)
Task	Poor	21	197	1	.001*	1 ^R	
	Good	90	98			8.615 (5.055, 14.684)	5.491 (2.307, 13.069)
Salary	Poor	49	264	1	.099	1 ^R	
	Good	62	31			10.776 (6.355, 18.271)	2.189 (0.864, 5.549)
Work load	Poor	28	197	1	.072* *	1 ^R	
	Good	83	98			5.959 (3.643, 9.747)	2.422 (0.925, 6.342)
Management style	Poor	40	213	1	.006*	1 ^R	
	Good	71	82			4.611 (2.900, 7.331)	4.017 (1.490, 10.828)
Job stability	Poor	42	223	1	.286	1 ^R	
	Good	69	72			5.088 (3.191, 8.114)	1.769 (0.620, 5.049)
Work environment	Poor	32	213	1	.798	1 ^R	
	Good	79	82			6.413 (3.955, 10.397)	1.148 (0.400, 3.299)
Moral satisfaction	Poor	21	289	1	.001*	1 ^R	
	Good	90	06			206.429 (80.828, 527.2)	177.654 (59.539, 530.08)

*Significant at 0.050

**Marginally significant at 0.050

4.7. RESULT IV: CURRENT HEALTH CARE DELIVERY PERFORMANCE OF PUBLIC HOSPITALS

The researcher investigated the current health care delivery performance of public hospitals in Addis Ababa, using the health system framework proposed by WHO (2010:4). The framework divides health systems in terms of six core building blocks, namely finances, health workforce, information, governance, medical products and technologies, and service delivery (Figure 4.5).

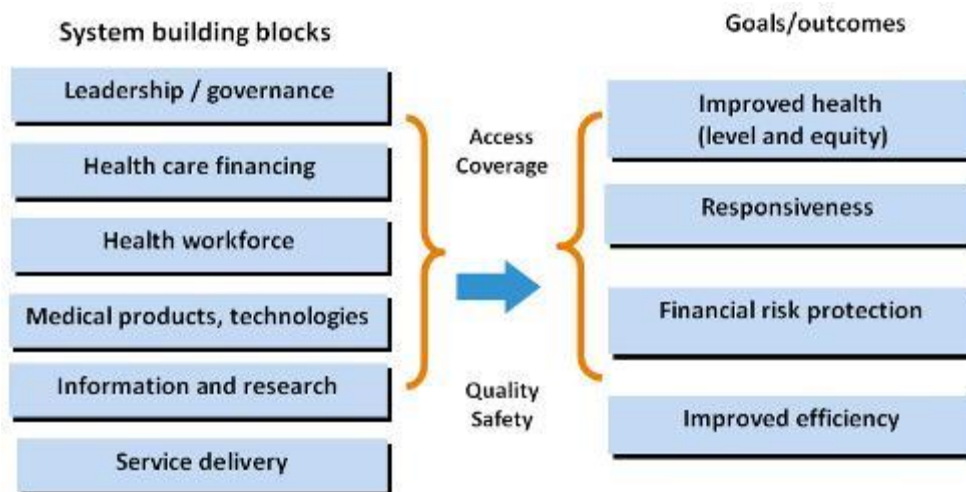


Figure 4.5 The WHO Health Systems Framework

Based on the framework, the researcher has made analysis on the items assigned to each building block to determine the health care delivery performance of the hospitals.

4.7.1. Leadership/governance

Five specific items responded to by the health care providers were assigned under leadership/governance category and analysed by the current leadership/governance performance of the Ethiopian public hospitals that implemented BPR health care reform.

The % mean score of the building-blocks that deals with leadership/governance was 61%. Under this category, the highest % mean score was on the best use of resources (65%), while the lowest was on the appropriate use of staff working hours (58%) (Figure 4.6).

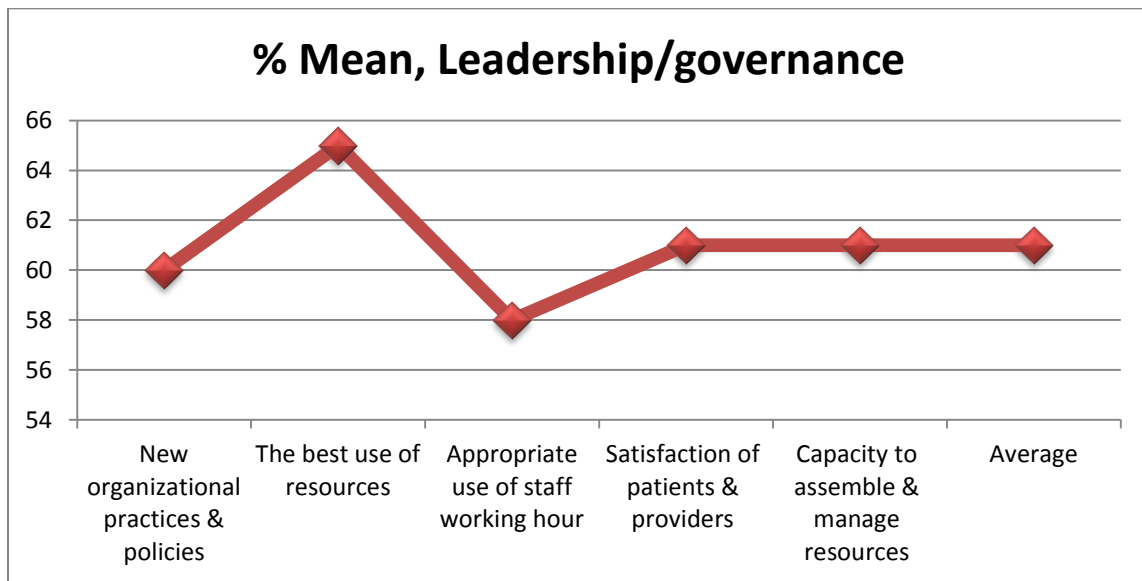


Figure 4.6 % mean score of leadership/governance

4.7.2. Health care financing

Five specific items which deals with health care financing were compiled from the study questionnaire and their responses analysed to assess current health care delivery performance of Ethiopian public hospitals that have undergone BPR health care reform.

The average % mean score of the building-blocks that deals with health care financing was 62%. Under this category, the highest % mean score was on availability of the required financial resources to insure sustainability (65%), while the lowest score was on the linkage of financial mobilization with evidence-based plan (58%) (Figure 4.7).

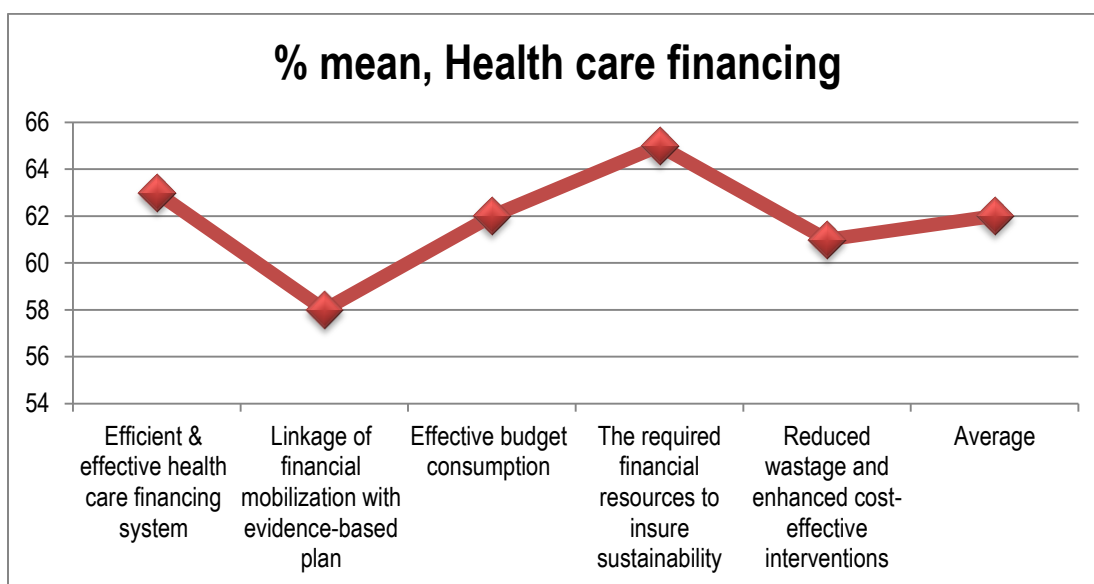


Figure 4.7 % mean score of health care financing

4.7.3. Health workforce

Six health workforce-specific items were compiled from the study questionnaire and their responses analysed to assess current status of health workforce, thereby assessing current health care delivery performance of Ethiopian public hospitals that practiced BPR health care reform.

The average % mean score of the building-blocks that deals with health workforce was 55%. Under this category, the highest % mean score was on availability of the required qualified staff (63%), while the lowest score was on the availability of conducive staff rest rooms (47%) (Figure 4.8).

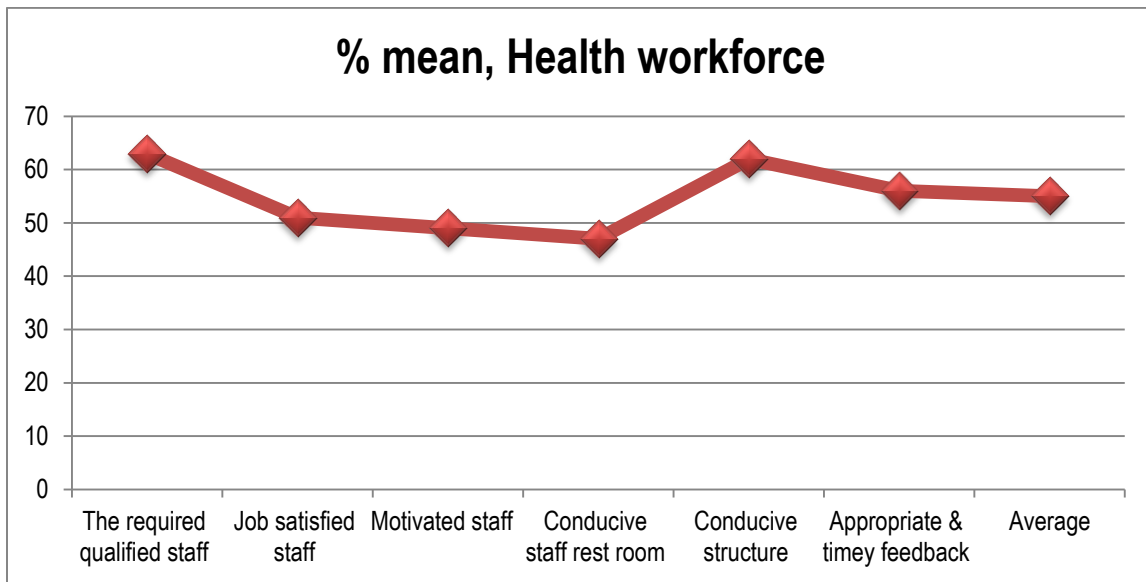


Figure 4.8 % mean score of health workforce

4.7.4. Medical products/technologies

Four items specific to medical products/technologies were combined from the study questionnaire and their responses analysed to assess current capacity of public hospitals in terms of medical products/technologies, thereby assessing current health care delivery performance of the Ethiopian public hospitals that practiced BPR health care reform.

The average % mean score of the building-blocks that deal with health workforce was 58%. Under this category, the highest % mean score was on the network the hospitals developed with the external environment (60%), while the lowest score was on the availability of enough drugs, medical supplies, medical apparatuses and equipment (56%) as well as new organizational practices and policies (56%) (Figure 4. 9).

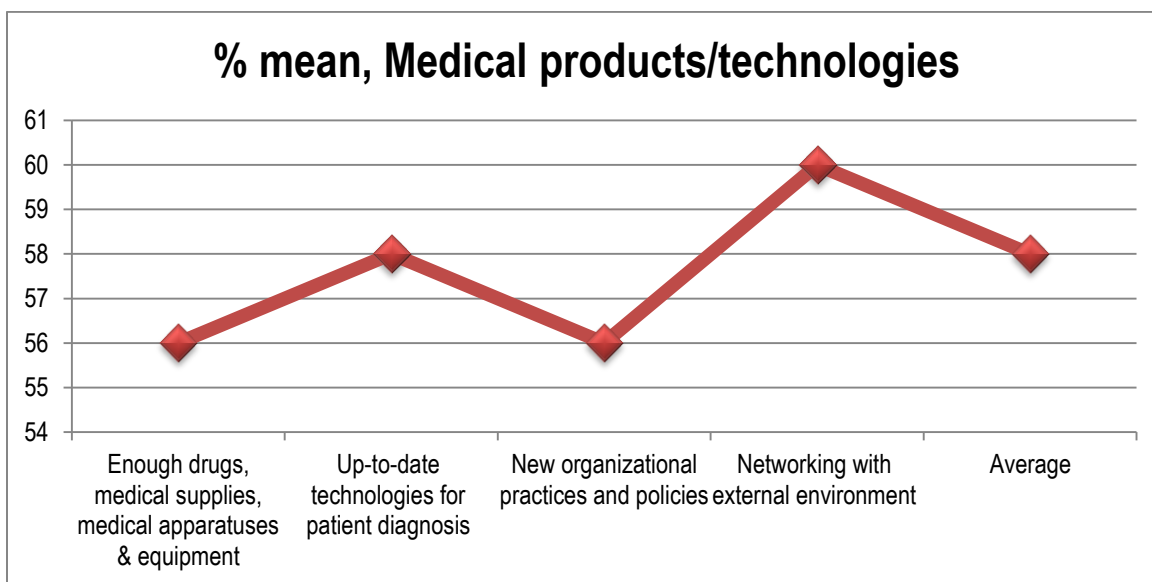


Figure 4.9 % mean score of products/technologies

4.7.5. Information

Four items specific to information were combined from the study questionnaire and their responses analysed to assess current capacity of public hospitals in terms of information, thereby assessing current health care delivery performance of the Ethiopian public hospitals that practiced BPR health care reform.

The average % mean score of the building-blocks that deal with information was 53%. Under this category, the highest % mean score was on availability of monitoring and evaluation system (60%), while the lowest score was on internet access (38%) (Figure 4.10).

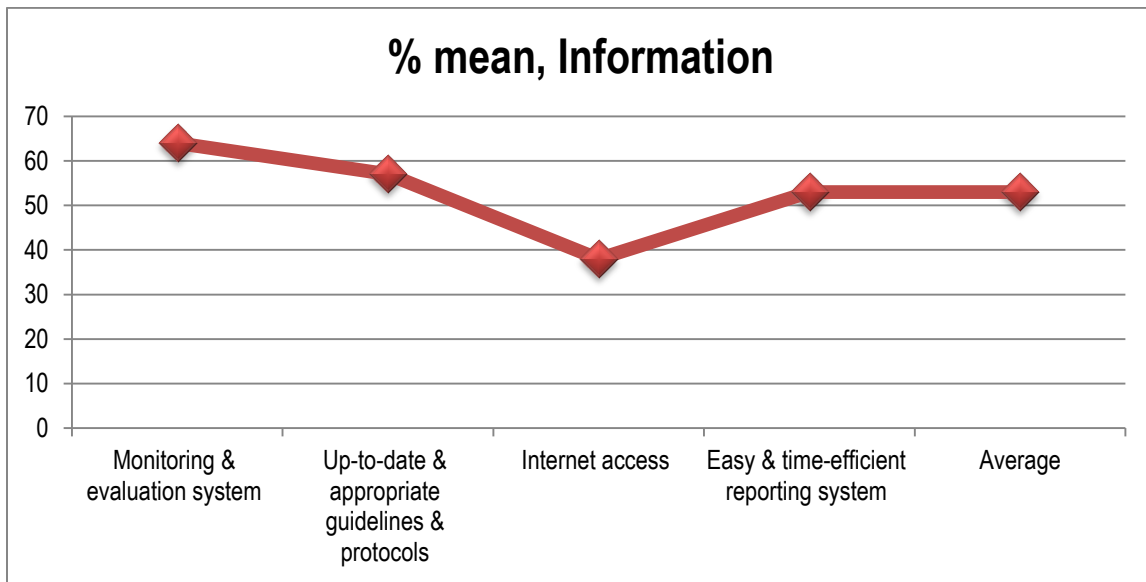


Figure 4.10 % mean score of information

4.7.6. Service delivery

Five items specific to service delivery were combined from the study questionnaire and their responses analysed to assess the current status of public hospitals in service delivery capacity, thereby assess current health care delivery performance of the Ethiopian public hospitals that practiced BPR health care reform.

The average % mean score of the building-blocks that deal with information was 69%. Under this category, the highest % mean score was on availability of no patient discrimination (80%), while the lowest score was on patient satisfaction (63%) (Figure 4.11).

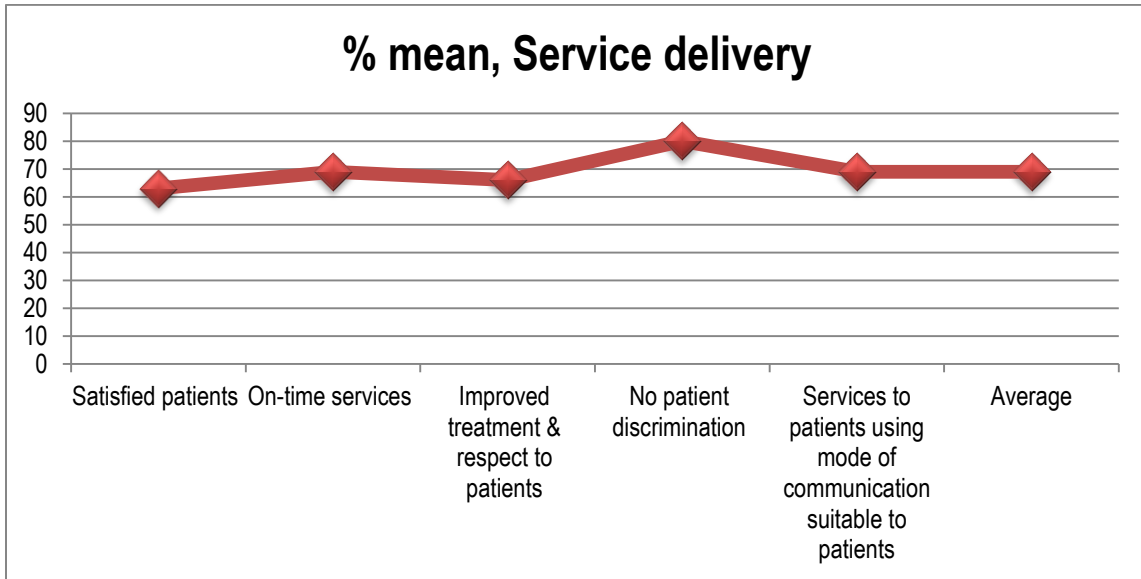


Figure 4.11 % mean score of service delivery

4.7.7. Overall performance

Figure 4.12 describes the overall performance of the public hospitals. The % mean score of the six indicators was 60%.

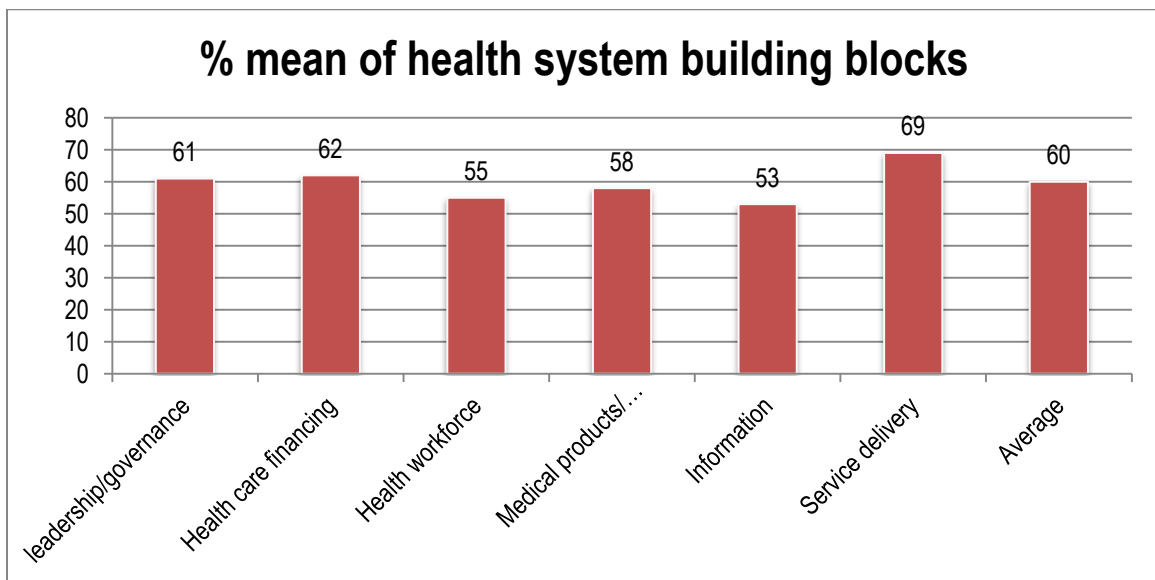


Figure 4.12 % mean score of the health system building blocks

4.7.8. Kruskal-Wallis test

The Kruskal-Wallis test was made to check whether there was a significant difference among the median score of the five hospitals showed a significant difference in health care performance between at least two hospitals ($p < 0.001$) (Table 29).

Table 4.29 Kruskal-Wallis test analysis of job satisfaction among the study hospitals

Test statistics	
N	406
Median	86
Chi-Square	35.116
df	4
Asymp. Sig	.000

4.8. CONCLUSION

This chapter analysed and presented findings of the study to illustrate demographic characteristics of the study and meet the first four specific objectives of the study. The next chapter presents study discussion, conclusion, and recommendations.

CHAPTER 5

PROPOSED STRATEGIES TO STRENGTHEN IMPLEMENTATION OF THE BPR HEALTH CARE REFORM IN ADDIS ABABA, ETHIOPIA

5.1. INTRODUCTION

This chapter presents phase II of the study which aimed at proposing strategies to strengthen the implementation of BPR health care reform in Addis Ababa, Ethiopia. The development of the strategies was guided by the Delphi technique which assisted in developing a consensus of opinion regarding the strategies proposed by the researcher based on findings of the phase I study, relevant aspects of literature, the insight of the researcher, and the theoretical frameworks used (refer Chapter 1).

5.2. PROCESS OF DEVELOPING THE STRATEGY

The Delphi technique was used as the procedure appropriate to develop strategic priorities for decision making in the context of implementation of the BPR Health care reform in Addis Ababa, Ethiopia. The Delphi technique is a method used to obtain the most reliable consensus of opinion of a group of experts by a series of intensive questionnaires interspersed with controlled feedback (Keeney et al 2011:3). The method is administered by a researcher or research team who assembles a panel of experts, poses questions, synthesizes feedback, and guides the group toward consensus (Cole, Donohoe & Stellefson 2013:3).

In the process, all international or national level institutions or organizations in Addis Ababa, Ethiopia which were working closely with the AAHB and Ethiopian FMOH were taken as the total site population. Of these, all government health bureaus, development partners, NGOs, academics, health care administrators, and health professional associations in Addis Ababa, Ethiopia were identified as the site target

population. Subsequently, institutions/organizations in the site target population which hosted senior health policy experts were identified as the accessible site population.

All senior health policy experts in Addis Ababa, Ethiopia were identified as the total population of the study, while all senior health policy experts that were working in government health bureaus, development partner institutions, non-governmental organizations, academics, health care administrations, and health professional associations in Addis Ababa were identified as the target population. Using purposive sampling technique, 20 senior health policy experts were nominated from the target population through personal networks and referral by other experts and assigned as the accessible population. From these, 10 (50%) were selected using purposive sampling techniques and procedures of the Delphi technique and engaged as respondents. The name of the site target population, the accessible population, the contribution of each site and the respondent's inclusion and exclusion criteria are described in detail in chapter 3.

The process involved developing seven strategic priorities based on findings of phase I of the study and conducting two rounds of Delphi technique. The seven strategic priorities were likely to strengthen implementation of the BPR health care reform and attract significant impact on future health care systems in Ethiopia, particularly in the HSTP period 2016-2020. The seven strategic priorities developed were:

- Reinforce patient-centred quality of care services;

This strategic priority was emanated from specific objective one of the study which assessed and described the quality, access, equity, efficiency, and sustainability of services in the public hospitals. The strategic priority was pooled mainly from the gaps identified on patient-provider interaction, the temporal, cultural and

approachability dimensions of health care access, and the equity of health care services.

This strategic priority was aligned with five strategic objectives of the HSTP 2016-2020, namely, P1: Improve access to quality health services (FMOH 2015:76); C1: Improve community health status (FMOH 2015:76); C2: Improve community empowerment (FMOH 2015:74-75); P6: Improve community participation and engagement (FMOH 2015:80); and CB3: Improve health infrastructure (FMOH 2015:83).

- Foster a healthy and respectful workforce environment;

This strategic priority was emanated from the major gaps identified while the relationship between the BPR health care reform and health care providers' job satisfaction was examined to address specific objective three of the study. The in-depth analysis made on continuing education, salary and benefits, management style, tasks, work environment, workload, moral satisfaction, and job stability of the health workforce has flagged up the prompt need for a healthy and respectful workforce environment in the public health care sectors. The health workforce gaps recognized in the specific objective four of the study was equally contributed to the development of this strategic priority.

The strategic priority was aligned with strategic objective CB2: Improve development & management of human resource for health (FMOH 2015:82) of the HSTP.

- Enhance efficiency of hospital financing;

This strategic priority was emanated from findings in the specific objective two of the study which identified financial resources as the major influencing factor of the health care reform, and findings in the specific objective four which identified health care financing as the major gap in the current health care delivery performance of public hospitals.

This strategic priority was associated with four strategic objectives of the HSTP, which were F1: Financial stewardship to improve efficiency and effectiveness (FMOH 2015:75); P5: Improve logistics supply and management (FMOH 2015:79); and P7: Improve resource mobilization (FMOH 2015:80).

- Initiate new health care reform;

This strategic priority was proposed from findings in the specific objective one of the study which witnessed incompetency of the BPR reform to ensuring sustainability of the hospitals' services and the inappropriate processes followed in the implementation of the health care reform.

This strategic priority was aligned with strategic objective CB4: Enhance policy and procedures (FMOH 2015:83).

- Ensure efficient and accountable leadership and governance;

This strategic priority was emanated from the leadership and governance gaps identified while the current health care delivery performance of public hospitals were assessed to address specific objective four of the study. The findings indicated the need for efficient and accountable leadership and governance practices to make the health care system effective.

The strategic priority is aligned with strategic objective P3: Enhance good governance (FMOH 2015:78) and CB4: Enhance policy and procedures (FMOH 2015:83).

- Maximize innovations and the use of health technologies;

This strategic priority was rooted in findings from specific objective two of the study which identified critical gaps in the development and usage of IT, and specific objective two of the study which identified major gaps in medical products/technologies and gaps in the meaningful exchange of information.

The strategic priority is aligned with two strategic objectives of the HSTP; namely P8: Improve research and evidence for decision making (FMOH 2015:81) and CB1: Enhance use of technology & Innovation (FMOH 2015:82).

- Trigger health system audits;

This strategic priority was proposed based on the overall findings of phase I of the study which indicated the lack of a well-functioning monitoring and evaluation system across the administrative hierarchies of the public health sector. The strategic priority is designed to strengthen strategic objective P4: Improve regulatory system (FMOH 2015:77).

Following development of the strategic priorities, two rounds of Delphi technique have been conducted. In the first round, a questionnaire which consisted of a set of the seven strategic priorities was used to collect data from the respondents. The strategic priority statements the researcher developed were not ordered by priority of importance. In section A of the questionnaire (Annexure 2), the respondents sequenced the strategic priorities from 1 to 7. For section B, the panellists needed to choose “Likely” or “Unlikely” by marking “√” in either of the block that they feel are the most appropriate.

There was also a consent form (see Annexure 7) developed for respondents to read and sign. Among the seven strategic priorities the researcher proposed, “Initiate new health care reform” and “Trigger Health system audits” had a similar number of votes that lies on score 6, with a mean rank of 2.0/7. The strategic priority statement “Reinforce patient-centred quality of care services” scored the highest, with a mean score of 6.4/7. Mean score of round 1 Delphi procedure is summarized in Table 5.1.

Table 5.1 Ranking of strategic priorities by panel experts

Strategic priority	Mean score	Rank
Reinforce patient-centred quality of care services	6.4	1
Foster a healthy and respectful workforce environment	5.9	2
Ensure efficient and accountable leadership and governance	4.9	3
Efficient use of hospital financing	4.1	4
Maximize innovations and the use of health technologies	2.7	5
Trigger Health system audits	2	6
Initiate new health care reform,	2	6

A round two Delphi technique was conducted to further differentiate the rank between the two last strategic priorities, “Trigger health system audits” and “Initiate new health care reform”. For this round, another questionnaire aimed at informing the panel experts about findings of the first round of the study and seeking further consensus about the two strategic priorities was developed and given to the respondents to fill in and return to the researcher. According to analysis of the round two Delphi technique, the strategic priority statement titled “Initiate new health care reform” has got 6th rank, while “Trigger health system audits” ranked 7th. However, both strategic priorities were discarded as they were outliers, while the first five strategic priorities were used to develop the strategy.

5.3. FORMULATION OF THE STRATEGY

The findings from phase I indicates that public health care facilities in Addis Ababa, Ethiopia are increasingly expected by patients, governments and funders to enhance their level of performances. This requires an evidence based and realistic strategy. The following strategy, developed and proposed by the researcher, emerged through analysis of the current health care performance of public hospitals in Addis Ababa, Ethiopia. The strategies developed align with the draft HSTP developed by the Ethiopian

FMOH for the years 2016-2020, the core components of the BPR health care reform, and the objectives, purposes and goals of Ethiopian public hospitals.

The strategy is divided into five major strategic priorities. Each strategic priority consists of definition, rationale, strategic priorities, and key interventions. The strategy considered what affordable approach would lead public hospitals in Addis Ababa to the most success, what kind of facility the hospitals want to become, and what businesses the hospitals are.

5.4. STRATEGIC PRIORITY I: REINFORCE PATIENT CENTRED QUALITY OF CARE SERVICES

5.4.1. Definition

Quality of care is the degree to which health services for individuals and populations increase the likelihood of desired health outcomes and are consistent with the existing professional knowledge (Institute of Medicine 2013:1977). Patient-centred care create systems, processes and structures for providing quality of care that is respectful of and responsive to individual patient preferences, needs, and values and ensuring that patient values guide all clinical decisions (Barnsteiner, Disch & Walton 2014:17). Improving quality of care depends on a patient-centred orientation in which providers communicate meaningfully and effectively and provide culturally competent and safe care (Hamric, Hanson, Tracy & O'Grady 2014:185).

In the same way, quality of care in Addis Ababa aimed at delivering the highest quality healthcare services which would make positive difference on to citizen's health.

5.4.2. Rationale

The rationale for strategic priority I emanated from the findings of this study which indicate that the current quality of services provided by Addis Ababa public hospitals that undergo BPR health care reform have serious challenges in meeting quality of care needs. Among the major challenges identified were high patients' wait time, biased patient-provider interactions, low treatment and care services, disrespect of patients, missing patient's medical records, patient's dissatisfaction, hazardous work area, and incongruous infrastructure. Reinforcing patient centred quality of care services will be ensured at the level of public hospitals in Ethiopia as follows:

5.4.3. "Whole-person" care

The quality outcomes of public hospitals in Addis Ababa can be improved through the coordination of health, behavioural health, and social services in a patient-centred manner. This will help patients interact in the hospitals with coordinated system, receive truly integrated services through appropriate providers, and have all the freedom, dignity and respect to all citizens.

Key interventions:

- Perform on-going assessment and reporting of health disparities in order to ensure well-integrated physical, behavioural, and social health services
- Establish standards of care for persons with disabilities in order to develop an understanding of patients as an individual, not as a disease, and to ensure availability of appropriate services for people with disabilities
- Take account of the particular needs of patients within specific groups when planning and delivering care

- Modify the physical layout of public hospitals to provide access for people with mobility difficulties
- Clearly identify unmet target population who receive the hospital's services in order to identify priorities to reduce health inequalities, avail enough health care assistance, and plan improvements for access and inclusion.

5.4.4. Coordination and communication

Implementing a holistic, ethically imperative, coordination and communication approach across Addis Ababa public hospitals enhances effective exchange of information in a timely manner, improves transitions of care, reduces administrative overhead, and ensures patient-centred quality of care. Effective communication is required to effectively meet patients' expectations and to engage them actively to participate in the decision-making process of the hospitals.

Key interventions:

- Ensure accurate and complete coding of documentation in order to deliver all relevant information to patients whenever they move between services and to ensure that they are delivered the best possible care
- Plan to improve health care services in line with the best practices recommended by the Ethiopian National Accreditation Office & other national/international standards
- Seek regular feedback from patients about their experience of the hospital's services to evaluate the impact of service interventions and ensure that the preferences and views of patients are taken into account when developing and delivering services

- Establish strong communication platforms between departments in the hospitals to optimize patient's flow
- Simplify exchange of patient medical records through well-secured electronic communication technologies
- Release information to the community about what health care services are available at the hospital and how people can get to them

5.4.5. Patient support and empowerment

Public hospitals in Addis Ababa should provide patients with the opportunities and environment to develop the skills, confidence and knowledge to move from being a passive recipient of care to an active partner in their health care.

Key interventions:

- Reshape morning patient health education sessions to be much more easily stimulating and understandable way that patients interact, ask questions, and express needs and expectations
- Enable patients to understand their health condition, take responsibility for their health, and actively seek care only when necessary by creating and providing them with a patient's information brochure, and allow the patients to take responsibility for their health

5.4.6. Ready access to health care

Public hospitals need to provide ready access to care in the most advanced possible way. The public hospitals should offer health care services with more advanced technologies uninterruptedly. The medium term HSTP developed by the Ethiopian FMOH for the year 2016-2020 shall advocate for a ready access to care at tertiary hospitals level.

Key interventions:

- Redesign advanced models of care for patients with emergency and urgent health care needs
- Provide ambulatory care for the community in a more advanced and well-prepared way
- Digitalize hospital discharge planning to make beds ready for access
- Establish a continuous quality improvement process to identify and address problems
- Establish a proper and integrated linkage between public hospitals for patient referral systems
- Improve and automate diagnostic services to enhance quality of care delivery

5.4.7. Autonomy

Public hospitals should reinforce keeping the rights of patients to determine their medical care without their health care provider trying to influence the decision.

Key interventions:

- Protect the right of patients to be given information about their medical diagnosis, treatment, and progress, except in the interest of protecting others who may be harmed by the patient's decisions.
- Keep patient's medical records and confidential information in a way it can be archived only by an allowable person.

5.5. STRATEGIC PRIORITY II: FOSTER A HEALTHY AND RESPECTFUL WORKFORCE ENVIRONMENT

5.5.1. Definition:

Skilled and passionate workforces are committed staff who deliver the long-term business goals of an organization and move it closer to realizing its vision (Mathile 2013:75). These staff are a fundamental element of any functioning health system. Hospitals are only as good as the workforces that run them, and create policies. Programs that can keep the workforce healthy and functioning well to meet the needs of patients they serve should be a priority (Adams 2015:25).

5.5.2. Rationale:

The findings of this study revealed that job satisfaction of the providers that are working in public hospitals is low. The major causes of job dissatisfaction identified in the study were lack of appropriate salary and benefits, continuing education, management style, tasks, work environment, workload, moral satisfaction, and job stability. All of these challenges were not properly addressed in the BPR health care reform. As the causes and consequences of the job dissatisfaction have a direct effect on the life of patient, the hospitals' management need to understand what appropriate strategies are needed and should be in effect to enhance job satisfaction within their settings.

Strategic Priority II shall be delivered at the level of public hospitals in Addis Ababa in the following way:

5.5.3. Appropriate Staffing

The likelihood of death or serious complications in public hospitals could be decreased by assigning competent providers that match with patient load. It is likely

to minimize diagnosis, care and treatment errors through the deployment of competent and appropriate numbers of health workforce.

Key interventions:

- Clarify the existing number of staff and their specific roles within the BPR case teams to ensure clear job descriptions are in place for all staff to understand and abide by
- Monitor staffing requirements to ensure adequate staff with appropriate competencies and attributes are in place as guided by the Ethiopian FMOH
- Develop a robust workforce plan to ensure quality patient care
- Ensure skilled and passionate staff are used effectively to provide excellent health care services
- Promote a safe and supportive working environment, free of harassment and discrimination, for all workers, regardless of their political view, gender, ethnicity, age or any other aspect of difference

5.5.4. Meaningful Recognition

Recognition of public health workforce to reward their work and behaviours is a fundamental need for them to extend their determinations towards meeting the intended goals of the hospitals. The recognition shall be made in such a way that it is relevant to the actual needs of providers.

Key interventions:

- Regularly monitor staff service performance data to reward and attract best-performing providers who bring innovative ideas and procedures

- Well-mentor, develop and train staff to promote professional development and to ensure that their expertise and skills are not lost in the organisation.
- Promote outstanding employees through newsletters and forums to encourage providers to develop strong personal accountability and empowerment to achieve the hospital's goals
- Identify functions and activities that supervisor-level hospital staff could delegate to their lower level staff in order to make staff feel more valued and respected
- Expand the range of employee income through further provision of private-wing and other initiatives to compensate for salary dissatisfaction, which was identified in the current study as the major reason for job dissatisfaction
- Negotiate more with Ethiopian Housing Development Agency for staff housing to enable staff early benefit from the condominium housing strategy intended for government employees

5.5.5. Professional development

Professional development opportunities for public hospital workforce shall be recognized as critical in maintaining a skilled public health workforce and ensure job satisfaction. The hospital managements need to strive for personal and professional growth of their staff.

Key interventions:

- Regularly re-evaluate the skills of the workforce to identify and rectify any skills deficits or training requirements to use their full potential to achieve their current task

- Prevent unfair and unjust differences among staff in opportunities for training and career progression
- Ensure all staff receive appropriate training regarding the hospital's mission, vision, values and goals
- Develop and implement a clearly defined career path for all health staff as indicated in the Continuing Professional Development (CPD) guideline for health professionals in Ethiopia developed in 2013 by the Ethiopian Food, Medicine and Healthcare Administration & Control Authority (FMHACA).
- Design and implement an organizational development plan to ensure job satisfaction among staff and sense pride to work in the hospitals
- Ensure all staff are appropriately trained and are encouraged and supported to maintain their expertise and competence to help them grow and develop professionally
- Identify and implement different on-line, distance, and face-to-face educational accesses as continuing professional development options for staff, and facilitate exchange visits for staff for information sharing

5.5.6. Skilled Communication

A culture of professional communication skills shall be ensured throughout the public hospitals to create a common understanding of ideas, desires, and observations between patients and providers, hospital management and providers, and among providers.

Key interventions:

- Provide timely, fair, and accurate performance feedback

- Create an environment where individuals from diverse backgrounds feel included, celebrated and respected
- Emphasize professional and personal diversity as a competitive advantage which could promote core values and professional standards
- Strengthen communication throughout the hospitals to develop a culture that encourages innovation, collaboration, and the free exchange of ideas
- Foster a positive and welcoming environment by nurturing a culture of respect, inclusion and equal opportunity

5.6. STRATEGIC PRIORITY III: ENSURE EFFICIENT AND ACCOUNTABLE LEADERSHIP AND GOVERNANCE

5.6.1. Definition:

Leadership and governance in building a health system involves ensuring that strategic policy frameworks exist and are combined with effective oversight, coalition-building, regulation, attention to system design, and accountability (WHO 2010:86). Governance indicates the organizational structures, policies and procedures, committees, and metrics through which activity is measured, change is managed, and decisions are made. Governance is where operational factors intersect with the political and cultural factors that exist in every organization. An effective and well integrated governance structure relative to capacity management enables decisions at every level that are data driven, transparent, and aligned with the goals of the organization.

5.6.2. Rationale:

The findings of the study revealed that leadership and governance system of public hospitals in Addis Ababa has been striving to effectively run the BPR health care reform. However, there have been visible leadership gaps which contributed to poor implementation and deprived results of hospitals' services. Lower competence and commitment of top management to support the reform efforts, not involving technical staff in various decision making, not organizing job related trainings to staff, and lower management capacity in leading quality of services were among critical governance gaps in the hospitals.

Strategic Priority III should be delivered at the level of public hospitals in Ethiopia in the following way:

5.6.3. Collaborative organizational culture

Hospital managements should lead the values and behaviours of their staff towards a system of shared assumptions.

Key interventions:

- Strengthen systems to monitor and communicate decision-making and ensure consistent and timely communication and messaging for feedback, constructive dialogue and on-going strategy development
- Decentralized management with as much delegation of authority and responsibility as possible
- Adapt a modern and efficient management structure and systems which could create a safe, fair, and stimulating working environment for all staff
- Recruit and retain skilled and motivated hospital managers who could provide models of good practice in management and motivation of staff

- Developing an effective communication strategy which facilitate communication between staff and management at all levels
- Pursue good governance through capacity building of hospital management teams

5.6.4. Partnership

Public hospitals develop and strengthen partnership to advance their mutual interests to achieve their mission and amplify their extent.

Key interventions:

- Collaborate and build partnership with other public and private hospitals in targeted areas to meet common goals
- Collaborate with universities, research institutes and professional associations for mutual interests
- Expand affiliations and partnerships with development partners to create novel interdisciplinary and inter-professional programs, approaches and projects that could insure sustainability of the hospitals

5.7. STRATEGIC PRIORITY IV: ENHANCE EFFICIENCY OF HOSPITAL FINANCING

5.7.1. Definition:

Efficient hospital financing determines whether health services exist and are available for everyone and whether people can afford to use health services when they need them. Hospital financing systems are critical to ensure that all people can use health services, while being protected against financial hardship associated with

paying for them. The hospital financing approach the Ethiopian FMOH intends to use to compute the resource requirements for implementing the 2016-2020 HSTP is the One Health Tool (OHT). OHT links strategic objectives and targets of disease control and prevention programmes to the required investments in health systems (Zinsstag, Schelling, Waltner-Toews, Whittaker & Tanner (2015:1-2).

5.7.2. Rationale:

The health care financing of Addis Ababa's public hospitals constrained availability of drugs, reagents and other needed supplies. Though there were efforts in increasing hospital revenues, financial mobilization and budget consumption of the hospitals were weak. Besides, corruptions were shown to exist due to poor health care monitoring systems.

Strategic Priority IV could be delivered at the level of public hospitals in Addis Ababa in the following way:

5.7.3. Responsible stewardship

Public hospitals in Addis Ababa are required to exercise ethics for a responsible planning and management of resources. The hospitals' financial management system should ensure the capacity needed to manage resources effectively.

Key interventions:

- Ensure maximum efficiency in the distribution and use of all hospital resources
- Ensure state-of-the-art facilities and infrastructure.
- Maximize and leverage philanthropic opportunities through training of the hospitals' finance and administration staff

5.7.4. Resource mobilization

Public hospitals need to maximize their sources of income from domestic and international resources. They should involve identifying other institutions that share the same values with them and take steps to manage the relationship.

Key interventions:

- Appropriately allocate resources and demonstrate value for revenues made
- Diversify revenue sources to establish a financially strong hospital which is responsive to changing financial conditions
- Seek a broad base of philanthropic support from communities and partners to involve in developing donor relationships to meet fundraising goals
- Design and implement infrastructure that supports in producing resources. This could be done by collaboration and agreement lease with private companies that supply equipment
- Provide sufficient resources including drugs, supplies and equipment to allow the hospitals to perform the required tasks

5.8. STRATEGIC PRIORITY V: MAXIMIZE INNOVATIONS AND THE USE OF HEALTH TECHNOLOGIES

5.8.1. Definition:

Health technology refers to new work, physical devices, and visual knowledge and expertise that, when located and relocated in the institutional landscape, or combined and recombined in health practices, may unfold unexpectedly into new patient-doctor constellations and organizational structures (Wasen 2013:1). The success of health technology depends on the connection of technology, information,

social networks, and on the collaboration of health professionals and all of the stakeholders in the health care experience (Jordan-Marsh 2011:28). Innovation is the successful introduction of something new and useful methods, techniques or practices, or new or altered products and services (Llano-Señarís & Campillo-Artero 2015:16).

5.8.2. Rationale:

Public hospitals in Addis Ababa lack up-to-date and advanced technologies such as automated laboratory equipment, medical devices, and IT, which could transform and improve quality of health care services. This forces the hospitals to refer their patients to private sector health institutions to get advanced diagnostic or therapeutic procedures, which could be unaffordable for patients. Besides, the network infrastructure of the hospitals to connect between departments or with other hospitals is limited. Above all, the health care providers are not supported or motivated to conduct researches which could advance hospital services and ensure sustainability.

Key interventions:

- Implement operational researches to prioritize future growth and development of health services and ensure hospital sustainability
- Encourage knowledge sharing and collaboration between hospital staff and other researchers and among professionals in order to improve patient care
- Strengthen electronic medical recording system across hospital departments and computerize management of supplies and drugs
- Document, disseminate and continually update standard operating procedures of hospitals services

- Assess needs and train staff on IT to ensure they have basic computer skills
- Train staff on preventive and curative maintenance procedures on basic medical equipment

5.9. PROPOSED IMPLEMENTATION OF THE STRATEGIES

The achievement of this strategy which is designed to support the BPR health care reform efforts will involve a period of change over the next five years. Implementation of the strategies shall involve, discuss and collaborate with the AAHB, FMOH and Addis Ababa public hospitals. The community shall also be aware of the strategies.

The proposed strategies shall safeguard the gains the reform has already made and build on successful initiatives. It should focus on stepwise, evolutionary change which is progressively consistent with the Ethiopia HSTP designed for the year 2016-2020. The researcher shall describe the importance and functions of the strategies and implementation procedures to the Chief Executive Officer and Medical Director of each hospital who will be responsible for implementation.

5.10. IMPACT EVALUATION

Once the strategies are implemented in the public hospitals, the hospitals' leaderships shall evaluate the impact of the strategies on hospital services to weigh and analyse whether the intervention strategies are working or not and hence assist in decisions about scaling up. The impact evaluation shall be conducted a year after full-implementation of the strategies, and continue on a yearly basis until 2020.

5.11. CONCLUSION

This chapter explained in detail the implementation of Phase II which was the development of a strategy to strengthen implementation of BPR health care reform in Addis Ababa, Ethiopia. Five strategy priorities were presented based on the findings of Phase I. In the next chapter, the conclusions and recommendations will be discussed.

CHAPTER 6

DISCUSSION, CONCLUSIONS AND RECOMMENDATIONS

6.1. INTRODUCTION

This chapter discusses the findings of the study in relation to the study's theoretical frameworks, policy guidelines and findings of previous studies. The chapter presents conclusions and recommendations based on the findings of the study, and highlights the limitations of the study.

The study was founded on the major country-wide health care reform initiative the Ethiopian government has implemented in the form of BPR to establish customer focused institutions, rapid scaling up of health services and enhancing the quality of care in order to improve the health status of the Ethiopian people. All the five specific objectives included in the study aimed to analyse this initiative from different viewpoints. The first objective of the study intended to analyse the effects of the BPR health care reform on health services quality, access, equity, efficiency, and sustainability, while the second objective of the study aimed to identify and analyse factors that influenced implementation of the BPR health care reform. The third objective aimed to examine the relationship between BPR health care reform and health care providers' job satisfaction and motivation, and the fourth objective aimed to investigate the current health care delivery performance of public hospitals under study. The fifth objective, aimed to develop a strategy to strengthen implementation of the health care reform initiative in Addis Ababa, Ethiopia.

6.2. RESEARCH DESIGN AND METHODS

This study applied a quantitative, exploratory and descriptive research design; and was divided into two phases. Phase I explored and described the effectiveness of the Ethiopian BPR-oriented health care reform, while phase II aimed to develop a

strategy based on the findings of phase I. The population of the study was all health care workers practicing in the five public hospitals of Addis Ababa. A self-designed structured questionnaire that required a five-point Likert scale of responses was pre-tested and used as a data collection instrument to collect primary data from respondents, which were the health care workers. Eligible respondents were male/female health care workers with age of 18 years or older who were involved in the implementation of the BPR oriented health care reform, and able and willing to provide informed consent as well as willing to participate in the study. Critical validity and reliability interventions were implemented to insure data quality and consistency. The SPSS version 20 was used to analyse the collected data and summarize using graphic presentations. The study was awarded Ethical Clearance Certificate from the Higher Degrees Committee of the Department of Health Studies, UNISA, and the Research and Technology Transfer Core-process of the AAHB.

6.3. SUMMARY AND INTERPRETATION OF THE RESEARCH FINDINGS

Interpretations and summary of the findings are presented below on the basis of the specific objectives used in chapter four.

6.3.1. The perceived effects of BPR health care reform on health service access, equity, quality, efficiency, and sustainability

The Ethiopian health care reform implemented in the form of BPR had as its most important goal to improve health care services. The Ethiopian government introduced the reform to divert the multiple challenges tracked from clients' complaints and on-site evaluations which witnessed a complicated structure across the health care facilities. The effect of this reform was measured against five dimensions of health care performance and analysis discussed below.

6.3.1.1. Quality

High quality health care services have been priority issues in which various Ethiopian regimes and the population at large have been expecting for centuries. The health policy of the transitional government of Ethiopia which was launched in 1983 recognized the development of an acceptable standard of health service system as a critical component in the general health policy. And lately, on the basis of this health policy, BPR health care reform came into position and attempted to satisfy health care quality needs of the government and citizens. It was yet to be assessed for what quality outcomes have been gathered; and where is the room for improvement.

The findings of this study witnessed that the implemented BPR health care reform was challenged to meeting health care quality standards. Unpredictably, the majority (59%) of the anticipated patient-provider interactions depicted in the reform document have not been achieved. According to the BPR health care reform guideline document, emergency patients coming to public hospitals at any time need to get the required services without any delay, while outpatients need to complete treatment services within two hours and patients' admissions should be carried out

within 10 minutes (AAHB 2008:9). Similarly, patients who require specialized health care services need to get the services within 72 hours of visiting the hospitals. Besides, any patient who received health care services within the hospital was required to get medical certificate within one hour of requesting the service. The reform document also urged for satisfaction of patients for health care services provided and the respect health care providers gave to them.

However, the findings of this study confirmed that the implemented BPR health care reform was unable to satisfy patient-provider interactions targeted in the reform document. In particular, the study witnessed low patient satisfaction and poor treatment and respect given to them by providers as to highly affect patient-provider interaction, thereby outcomes of health care quality.

Prior to designing and implementing BPR health care reform, the Ethiopian government was able to conduct SWOT analysis and identify major gaps that could impact patient-provider interactions, and amongst this was longer patients waiting time (AAHB 2008:2). And yet, this study revealed that the challenge has not been terminated. A recent study conducted in Addis Ababa, Ethiopia (Zewdneh, W/Michael & Kebede 2011:3) and another study conducted in Jimma Zone in Ethiopia (Beyene et al 2011:59) also reported similar results. Patients view their experiences of long wait times as part of the typical visit context that affected interactions negatively (McCarthy, Engel, Buckley, Huang, Acosta, Stancati, Schmidt, Adams & Cameron 2014:519).

Numerous studies boldly underlined that a well-designed and well-implemented patient-provider interaction has greater impact on meeting the expectations of patients thereby improving health care quality outcomes. HaileMariam (2011:1) indicates that the Ethiopian health-care environment required proper patient-provider interaction to enhance quality of care outcomes. A mutual construction and maintenance of trust between patient and provider would generate smooth

interaction between the two parties. The presence of this trust further insists the community decide to engage in prevention and control interventions in the general health care systems (Simonds, Christopher, Sequist, Colditz, & Rudd 2011:848).

Similar to patient-provider interaction, the effect of BPR health care reform was poor in improving the interaction between providers and the hospital management. The findings of this study discovered that the implemented reform did not come up with encouraging results regarding the attention given to providers by hospital managements. Appropriate and timely feedback to staff, clear job descriptions, motivation, job satisfaction, and staff promotion could not be improved as providers anticipated. These findings also concur with previous studies held in Ethiopia (Negussie & Costantinos 2011:81-83; Negussie 2012:112; EMA 2012:27).

Poor provider-management interaction in public hospitals would compromise the maximum commitment and engagement providers could exert to their duties. This in-turn leads the hospitals not to function to the best of their abilities. Hence, health care providers who are practicing in public hospital of Ethiopia need to acquire critical attentions by the hospitals' managements. It is crucial to actually listen and respond to providers' needs to ensure high levels of engagement throughout the hospitals. If there are factors which are beyond the control of providers, the possibilities that they become client-oriented, productive, and skilled and competent to perform their duties would lessen (Lutwama et al 2012:9). Dorgan, Layton, Bloom, Homkes, Sadum and Keenen (2013:7) indicate in their study that hospitals with higher management-practice scores had better clinical outcomes, higher levels of patient satisfaction, and better financial management. Serra, Serneels and Barr (2010:14) posit that intrinsic motivation is important when young Ethiopian health workers are making career choices.

Providing regular assessment of health care services creates excellent opportunities for the staff and leadership to address issues immediately and work for

improvement. To this end, the weaker monitoring and evaluation system that existed in the hospitals needs to be improved. Quality metrics and practices need to be in place to define and document both success and failure for providers and the management. In general, quality outcomes of the Ethiopian BPR health care reform initiative in the context of patient-provider interaction, provider-management interaction, and documentation and monitoring aspects, were weak which needed much effort: better quality results in less rework, fewer mistakes and patient delays, reasonable price, a better use of time, and high productivity.

The quality of care service in Addis Ababa public hospitals was severely affected by several gaps while the reform is implemented. There were severe gaps in the implementation process of the BPR health care reform which contributed to the falling of service quality. For instance, high level supervisors had given the implementation process of the health care reform little attention, and this actually contradicts the direction of the Ethiopian BPR health care reform document and other international health care reform standards.

Looking at the WHO handbook (WHO 2010:2) as a standard, health sector leaders and policy-makers who are tasked with assessing their health systems should participate in the process to deliberate on ways to assess these key characteristics in their countries. The management is responsible for informing the reform implementing staff why the reform is needed and how it will impact everyone's current and future jobs (Habib & Wazir 2012:175). The management's support and involvement in all phases of the BPR reform effort is essential for the success of BPR implementation (Saad 2010:5).

In the Ethiopian BPR health care reform implementation process, adequate training had not been given to all staff to make them capable of implementing the reform. This would have its own contribution toward the revealed weak performance of the BPR health care reform. Technical, leadership, or interpersonal skills, based on the

new position of each staff, were required to enable all staff perform their new duties at a desired level.

In addition to proper training, implementation of BPR reform requires composition of the right team members to process the reform. Despite this need, team compositions in the implementation of the BPR health care reform were shown to be inappropriate. The fact that feedback from patients and data from the pilot test were not incorporated to the BPR as anticipated also adversely impacted implementation of the reform.

In terms of structure, the BPR health care reform could not enable the hospital to become a better treatment facility than it was before, although there were some recognized improvements. Similarly, the way the hospitals were re-structured had not been matched to the daily work flow of the hospitals as anticipated.

In general, there have been many service quality gaps identified in the public hospitals that implemented health care reform, though there were a few improvements as well. The findings for both dimensions of health service quality, such as outcome, process, and structure, revealed an agreement score less than 50%. Thus, according to the findings of this study, the overall effectiveness of the BPR health care reform in improving quality of health care services was far behind the perceptions. Analysis made by Ethiopian FMOH (Admasu, Tamire & Tsegaye 2014:3) also revealed that reaching all Ethiopian people with quality essential health services is a key task that still remained. The findings indicate that improving quality of care in Ethiopian public health sectors is still a work in progress, and a declared and serious problem. HaileMariam (2011:2) boldly advised that it is high time that proper attention be given to quality in the delivery of health services in Ethiopia.

6.3.1.2. Access

Access to health care services is the other dimension of health system performance that health care reform efforts ought to address. Health care access is interpreted by the due-existence of physical, economic, temporal, cultural, and approachability dimensions of using health services.

In view of the physical dimension, the BPR health care reform implemented in public hospitals of Addis Ababa, Ethiopia, were able to organize the hospitals into three core case teams, namely, emergency, outpatient, and inpatient. The outpatient core case team consisted of eight activity-specific case teams, namely information/reception case team, triage and registration case team, liaison social cases information capturing case team, medium surgery case team, outpatient medical case team, outpatient pharmacy case team, outpatient diagnostic imaging case team, and outpatient diagnostic case team (AAHB 2008:11). Similarly, inpatient core case team consisted of nine case teams, namely surgery inpatient case team, paediatrics inpatient case team, internal medicine case team, gynaecology and obstetrics case team, critical patient case team, major surgery case team, laundry case team, post-mortem case team, and bio-medical engineering case team (AAHB 2008:11-12). Though the case teams existed in the hospitals, numerous physical barriers were shown to compromise day-to-day activities of the hospitals. Providing the case teams with major furniture, supplies, and infrastructure was considered a major implementation challenge of the health care reform. The hospitals still lack enough laboratory reagents, drugs, office furniture, and stationery materials, indicating that the effect of the BPR health care reform was fragile to satisfy physical needs of the hospitals. The researcher anticipated that these physical needs would be much worse in newly built public health facilities. This finding was supported by other studies conducted in Ethiopia (Ismail & Ali 2011:134; Elias & Accorsi 2014:23). However, another study reported that stock-outs of essential drugs have been substantially reducing in public health facilities (Zegelelew 2012:8)

In the global view of health care access, a well-functioning health system needs to ensure equitable access to essential medical products, vaccines and technologies of assured quality, safety, efficacy and cost effectiveness, and their scientifically sound and cost-effective use (WHO 2010:60). However, looking into results of the current study, changing strategies into practice is a critical gap.

Financial management systems raised another key concern in the reengineered public hospitals. The BPR health care reform was able to slightly increase income of the hospitals. However, the hospitals' health care financing system remained weak: financial mobilization schemes of the hospitals did not centre on evidence-based plans and their budget consumption system was stagnant.

The hospitals that implemented BPR health care reform are suspected of corruption, and this could contribute to the financial management gaps observed. The different financial management problems mentioned could justify that the BPR health care reform implemented in the public hospitals was far behind the target of economic dimension of health care access. The finding of this study was in support of other studies held in Ethiopia (Bradley et al 2012:6; Beyene et al 2011:51). The Ethiopian FMOH also verified in its HSDP IV document that health financing remains a major challenge in the health system of Ethiopia (FMOH 2010:27). HaileMariam (2010:2) highlights that in an attempt to be self-reliant in financing the provision of essential health services, Ethiopia should resolve to make its own investments in the health of its people. WHO (2010:3) also recommends that health care services should minimize wastage of resources by creating a strong financial management system.

The current health care reform implemented in Ethiopia was able to fairly improve turn-around-time of hospital services to satisfy temporal dimension of health care performance. Nevertheless, a higher rate of patient appointment time and longer waiting time on reception continued to challenge the health care delivery system of the hospitals.

Cultural dimension of health care access was another critical concern the BPR health care reform was intended to address. To this end, it has been indicated that patient discrimination in the hospitals highly decreased since the reform has been implemented, and this was the highest ever achieved result of the reform. The reform fairly declined patients' discriminations and enabled patients to receive health care services using modes of communications suitable to them. With this, the BPR health care reform was capable of addressing the cultural dimensions of health care reform performance, with only 0.6% level of disagreement recorded.

Despite implementation of the health care reform, public hospitals in Ethiopia did not establish a system that advocates the hospitals' services to their users. The community were required to become aware of the hospitals' services and the values towards their health through other routes or mechanisms.

In general, although the reform was capable of producing meaningful changes in the cultural and fairly in the approachability dimensions of health service systems, it was not be able to achieve the overall perceived access to health care services. The Ethiopian HSDP-IV which targeted the year 2010-2015 had the objective of reaching every section of the population with effective health interventions (FMOH 2010:39), and the implemented BPR health care reform was considered the major tool to take this into effect. However, the reform was unable to attain the intended results.

6.3.1.3. Equity

Health care equity, which is one of the dimensions of health system performance, was studied to analyse availability of adequate resources and systems in the hospitals which would fairly benefit every citizen. The findings of the study indicate that medical care costs of the hospitals were reasonable. The reform enabled financial procedures of the hospitals to highly endorse free services to patients who cannot afford them. The reform also allows patients with different socio-economic, demographic, ethnic, and/or gender groups to have equal access to the hospitals'

services. However, the reform was not able to address equity for disabled patients. There has been no infrastructure setup for disabled patients.

The overall findings of the study show that the implemented BPR health care reform was good at meeting the depicted health equity needs. The equity results observed in this study need to be strengthened in a more consistent approach to ensure universal health coverage across the country. To better strengthen this in Ethiopia, design and implementation of additional effective strategies is required (Wilunda, Putoto, Manenti, Castiglioni, Azzimonti, Edessa, Atzori, Meriardi, Betrán, Vogel & Criel 2013:1). A study released under USAID project by Alebachew, Hatt, Kukla & Nakhimovsky (2014:7) suggests that the numerous separate strategies, policies, and guidelines that are shaping Ethiopia's efforts to provide universal primary health care need to be consolidated into one coherent policy document with clearly articulated sources of financing.

6.3.1.4. Efficiency

Efficiency was the other dimension of health system performance assessed in the current study. The effect of the BPR health care reform on improving efficiency of public hospital services was shown to be unsatisfactory. In one side, enough and competent health care workers were not in place to efficiently implement the reform efforts. On the other side, efforts exerted by the hospitals' high level management in the reform implementation process were insufficient. It was noticed that high-level management did not enrich knowledge and technical competency of the staff to enable them efficiently implement the reform.

These challenges, together with high wastage and inefficient use of resources, led the BPR health care reform to have a negative effect on the efficiency dimension of health system performance.

6.3.1.5. Sustainability

All health care systems, no matter whether they are predominantly tax, social insurance-based, or market-based, struggled with the issue of sustainability to maintain quality and service coverage at an affordable cost (Lega, Prenestini & Spurgeon 2013:46). The BPR health care reform implemented in Ethiopia, particularly in the capital state, did not ensure sustainability of the hospitals' services to continue functioning and initiate changes so as to continuously improve performance. The commitment of hospitals' managements to maintain the BPR reform, readiness of financial resources and qualified staff, existing network of the hospitals with external partners, and satisfaction of patients and providers with existing hospitals' clinical and administrative functions was revealed as very weak to ensure sustainability of the hospital services.

The major objective of the current health sector visioning document developed by Ethiopian FMOH was to define a framework for strategic action to enable Ethiopia to achieve the health outcomes of a lower-middle-income country by 2025 and a middle-income country by 2035 (FMOH Policy Planning Directorate 2014:4). Among the six major strategic areas of the "visioning" is to develop sustainable financing mechanisms in the year 2015/16 – 2019/20. The detailed implementation strategies depicted in the document indicated that the majority of the financial gaps identified in the current study would be addressed, provided that an effective implementation system is in place.

The fact that the networking of the hospitals did not improve in the reform would highly impact long term sustainability of the health system and influence smooth referral systems among hospitals. Since inter-hospital collaboration is related to hospital productivity, health administrators should establish collaborative relationships that would favour collaborative network ties and mitigate inter-organizational competitions (Mascia & Vincenzo 211:327). Seeking and receiving

health care is frequently associated with delays in obtaining an appointment and waiting in emergency rooms and doctors' offices.

6.3.1.6. Summary

The goal of health care services provision is to improve health outcomes in the population and to respond to people's expectations, while reducing inequalities in both health and responsiveness. The health care needs of the population should be met with the best possible quality of services produced at minimum costs.

The BPR health care reform implemented in public hospitals of Ethiopia did not improve quality, access, efficiency, and sustainability of health services, while a relatively fair improvement was exhibited on equity. In contrast to these findings, there have been public hospitals in other countries that were able to effectively implement health care reform using BPR as a tool and reached positive outcomes (Srikanth 2012:5; Bertolini et al 2011:61; Netjes, Mans, Reijers, Wil & Vanwersch (2010:614; Caccia-Bava et al 2012:734).

6.3.2. Factors influencing the implementation of BPR health care reform

In section 5.3.1, the researcher analysed, discussed and interpreted the findings of the study about the effect of the BPR health care reform on health care service quality, access, equity, efficiency, and sustainability in the context of public hospitals in Ethiopia. In this section, the researcher discussed and interpreted the findings of the study towards factors that influenced the BPR health care reform.

The success of BPR efforts can only be dignified by outcomes based on facts, not stories. As described in detail in the literature review section of this study, there are success or failure factors of BPR reforms. The major ones are adequate financial resources, top management commitment and support, training, flatter structure, Information Technology (IT), collaborative working environment, and organizational culture. Using these factors as a guide, this study has identified factors that have been influencing implementation of the BPR health care reform in Ethiopia.

6.3.2.1. Adequate financial resources

Adequate financial resources are major requirements for a BPR reform to effectively function and achieve productive results (Mlay et al 2013:7; Ramanigopal et al 2011:283; Aghdasi, Albadvi & Ostadi 2010:2039).

Similarly, the BPR health care reform initiative implemented in the public hospitals of Ethiopia was influenced by financial resources. However, the positive financial interventions the hospitals were undertaking are opening room for improvement. For instance, there were positive trends that incomes of the hospitals are increasing and the required financial resources are emerging. At the time of the study, the financial resources needed to satisfy effective implementation of the reform, thereby ensuring sustainability of services, did not fulfil this need. This finding concurs with another study held in Ethiopia which reported scarcity of financial resources at health

facilities despite implementation of the BPR health care reform (Bradley et al 2012:6).

6.3.2.2. Top management commitment and support

Adequate financial resources must be accompanied by top management commitment and support to achieve positive results. The analysis revealed that the commitment and support of top managements towards the BPR health care reform implemented in the hospitals was not agreeable (61%). There could be several reasons for this result. Top management by themselves, may not be knowledgeable about BPR. Hospital managers breach the most important principles and procedures of BPR (Caccia-Bava et al 2012:729). This shows that strong leadership at the top will not in itself guarantee positive changes. Instead, senior management leadership is a necessary prerequisite for successful reengineering, not just any senior manager will do, since leaders can literally 'make or break' a BPR project (Goksoy et al 2012:98).

McNatt et al (2014:9) state that strengthening hospital top management to perform essential activities is equally needed to result in improved hospital performance. The fact that the Ethiopian BPR reform had a lesser commitment and support from top management needs critical attention. Strengthening the capacity of the top managements themselves is important for them to show up competently and deliver their level best.

Top management is responsible for ensuring that BPR implementing staff are convinced by the intended reform. Staff may fear of losing jobs, benefits and status, and these cause staff resistance to the BPR (Debela 2009:16). Strong leadership style should be in place to create an environment where employees affected by the BPR project understand its objective and are involved throughout the BPR process (Aghdasi et al 2010:2032). The Ethiopian public hospital staff must understand the overall function of core business processes in the hospitals and internalize it. While

business process owners who actually are responsible for the hospitals various operational functions need to monitor the reengineering day-to-day efforts.

6.3.2.3. Training

It was reported that there is a strong correlation between training and successful implementation of BPR (Habib & Wazir 2012:172). The BPR health care reform implemented in Ethiopia was influenced by training and training related needs. The training offered to staff was not adequate. Besides, the hospitals' staff did not have adequate knowledge of BPR objectives and principles and their technical competence to implement the BPR reform was not satisfactory. This would make the level of understanding of the staff towards the reform weak and the level of effort they would exert to implementation of the BPR fragile. Thus, a proper training program is a fundamental step in BPR implementation process. It enabled implementers to have in-depth understanding of their new tasks (Jamali et al 2011:355).

6.3.2.4. Collaborative working environment

A collaborative working environment was shown to negatively influence the BPR reform. The analysis showed a rational relationship between the reform and working relationship among staff and the BPR reform, but the reverse was shown in terms of a clear channel of communication in the work place.

6.3.2.5. Flatter management structure

BPR forces radical changes in key business processes which imply potential changes in jobs, organizational structure, and management systems. It flattens management layers, shifts responsibilities and power, and disrupts the status quo.

In this study, absence of flatter management structure across the hospitals was shown to negatively influence the BPR reform. The reason that involvement of the

technical staff in decision making was lowest and the composition of the team designed to process the BPR was incompetent were the major factors. Top managements were required assign their best employees to the redesign teams. The combination of these issues led the BPR reform to be negatively influenced by flatter management structure.

6.3.2.6. Information technology (IT)

IT is a potential enabler of BPR to establish a flexible, team-oriented, and cross-functionally co-ordinated management. The availability of effective IT systems in hospitals means an easy and time-efficient reporting system is in place. IT provides a platform to manage the BPR project, record various parameters, arrive at the best possible business process, and judge the impact of the reengineered processes (Aghdasi et al 2010:2030).

The public hospitals that undergo reengineering were not using IT systems as BPR implementation procedures advised. This resulted the hospitals not ensuring easy and time-efficient reporting systems. The findings of the study confirmed that there are shortages of well-functioning computers for IT use. This, by itself, would compromise effectiveness of the IT systems in the hospitals. Thus, absence of an effective IT system in the hospitals negatively influenced the BPR reform. The Ethiopian FMOH and other stakeholders in the field need to exert maximum efforts to build-up IT systems and infrastructure in the hospitals. Assuming IT infrastructure is established throughout the hospitals, the likelihood that all staff are able to exercise on it might be minimum, which may need extra efforts to give IT training to staff. Whatever the case is the burden that providers are facing while manually gathering and documenting patients and other hospital needs, requires an urgent solution.

In summary, analysis of this study has shown that adequate financial resources, top management commitment and support, training, flatter organizational structure, IT,

and a collaborative working environment prevented the effective implementation of BPR in the hospital. Among the six success factors, the factor that deals with adequate financial resources had the highest positive relationship (66%) with the BPR reform, while IT had the lowest positive relationship with the reform. To make the BPR effort successful, each of the six factors should be ensured in its place. The BPR effort in Ethiopia requires a major effort on every dimension of success/failure factors.

6.3.3. The relationship between BPR health care reform and health care provider's job satisfaction

Working life is one of the most important parts of social life that provides worker's significant well-being. Job satisfaction brings to the worker a pleasurable emotional state that often leads to a positive work attitude and improved performance. A satisfied worker is more likely to be creative, flexible, innovative, and loyal (Wicker 2011:3). In health care sectors that need to undergo health care reform, availability of resources and competency of workers are essential but not sufficient to ensure the desired worker performance. Rather, effectiveness of the reform is critically dependent on worker job satisfaction and motivation. For this reason, health care reform efforts need to focus not only on job and tasks becoming more interesting to patients, but also work to improve staff job satisfaction.

In the Ethiopian context, the relationship between BPR health care reform and health care providers' job satisfaction has not been studied in detail. This study, thus, had the aim of filling the gap.

This study re-structured its data collection instrument based on the multidimensional instrument which was developed by Faye et al (2013:8) and verified for its suitability for the sub-Saharan African context. The re-structured instrument constituted eight dimensions of job satisfaction: continuing education, salary and benefits, management style, tasks, work environment, workload, moral satisfaction, and job stability.

Under the first dimension of job satisfaction, which deals with continuing education, there was a relatively high level of disagreement by the providers that they are not getting work-related continuing education. This would restrict the providers to enhance professional development, build new capabilities, and decreases their

performance and productivity. Above all, lack of continuing education would create job dissatisfaction among the staff.

The gap in continuing education identified in this study provided evidence consistent with the findings of Yami, Hamza, Hassen, Jira & Sudhakar (2011:19), which reported low job satisfaction among health professionals working in an Ethiopian public hospital. Likewise, the Ethiopian FMOH (2015:47) testified that even though there are guidelines and directives regarding continuing professional development and in-service training in the health sector, enforcement is yet to begin. The Ethiopian FMOH report indicates that health workforce density in Ethiopia has increased from 0.84 to 1.3 per 1000 population between the years 2008 and 2013 though it is still far behind the minimum threshold required to ensure high coverage with essential health interventions (HSTP 2015:46). Local capacity to develop, besides, in-service training is not always need-based, well-planned, coordinated, quality assured, monitored and evaluated for its effectiveness.

The second dimension of job satisfaction studied was salary and benefits. Analysis of the findings revealed that salary is the major cause of job dissatisfaction among public health care providers in Ethiopia. This finding concurred with the study done in a specialized hospital in southwest Ethiopia which reported inadequate salary as a major reason for providers' job dissatisfaction (Yami et al 2011:25). Engeda, Birhanu & Alene 2014:1) also reported in their study held at a referral hospital in Amhara region, Ethiopia, that the likelihood of nurses to be satisfied with their job and stay in their profession has significant association with their satisfaction on payments and benefits.

The Ethiopian government has established private-wings in public hospitals to contribute in financing the hospitals as well as staff. The private wing is meant to improve the quality and timeliness of services, especially on weekends, to help reduce the turnover of skilled manpower through additional compensation, and to

motivate staff members to provide more and better services for an additional fee for those who can afford to pay. Until 2013, there 45 public hospitals which opened private wing services nationwide (Elias & Accorsi 2014:24). If the private wing is implemented effectively throughout public hospitals in Ethiopia, job dissatisfaction resulted from salary and benefits would decrease.

Staff moral dissatisfaction was recognized in the current study as a critical problem. Majority (57.4%) of health providers in public hospitals were morally demotivated with their current job. Staff demotivation, took the second highest share, next to salary, towards job dissatisfaction. Result on moral dissatisfaction revealed in the study concurs with another study previously conducted in Ethiopia (Negussie 2012:107).

In general, analysis of the study revealed that the implemented health care reform did not increase job satisfaction of hospital health care providers. Only over a third (36%) of public health care providers were classified as job satisfied. The majority of job dissatisfaction emerged from salary and benefits (63.1%), followed by moral dissatisfaction (57.4%), and continuing education (54.4%). These three dimensions are priority areas that government and partner institution should involve to ensure a job satisfied staff across public health facilities in Ethiopia.

Likewise, X-ray professionals were shown a higher sense of job dissatisfaction than the other health professions, followed by nurses and laboratory professionals. The reason for highest dissatisfaction among X-ray professionals could be the physical working conditions of X-ray departments (Magnavita, Fileni & Bergamaschi 2009:1330). On the contrary, pharmacy professionals were the least satisfied with their job, which concurred with the findings from Gebretekle & Fenta (2013:9) which reported a slightly higher satisfaction than the average mean satisfaction score. Thus, a high level of effort is needed to improve job satisfaction of public health care

staff, but the level of efforts needed among the different professions could be different.

Analysis of job satisfaction by year of service indicated that providers with the highest work experience (30-39 years) were the most job satisfied [mean score=3.81/5 (76%)], while those with the least work experience (6-9 years) were the most dissatisfied [mean score=2.79 (56%)]. Similarly, those with younger age were the most dissatisfied. This score may indicate that newly hired health care providers have higher expectations from their employers. Unlike findings of another study held in Ethiopia (Yami et al 2011:21), male workers feel a better sense of job satisfaction than females (56% versus 60%). The difference could be due to differences in sample size or study area.

6.3.4. Current health care delivery performance of public hospitals in Addis Ababa, Ethiopia

Ethiopia has been choosing different health care strategies and delivery models to meet higher quality of care, improve patient outcomes, decrease geographic variation in the delivery of care, and improve job satisfaction. Public hospitals in the country have been the most critical engine of the health care delivery system. However, analysis of the current study viewed that the politics of “primary health care” and other factors have been systematically neglecting the hospitals’ demands which would shape the future pattern of health care delivery system.

In the first place, governance and its implementation within the public hospitals face a number of challenges. The hospitals’ governances did not pursue staff loyalty to effectively use their time to maximize the hospitals’ capacity and ensure their sustainability. Instead of effectively reforming the hospitals to the best of their levels, greater energy has gone into advocating the existence of the reform in a politically-sensitive approach. Thus, according to the current study, poor-governance has been influencing the quality of care that public hospitals were providing and minimizing the government’s attempt to enhance health care delivery. For this reason, public hospitals in Ethiopia should commit to establish strategies that promote strong corporate governance practices.

Health care financing was another concern in the current health care delivery performance of public hospitals in Ethiopia. The health care financing capacity, in relation to health care goods and services (Paolucci 2011:3), shows that public hospitals achieved 62% of the intended health care financing scheme; indicating mandatory steps still remain. The hospitals were not effective enough to linking financial mobilization with evidence-based plans. Besides, the hospitals were unable to reduce wastages and enhance cost-effective interventions; though they were relatively better in securing financial resources to insure sustainability. These

indicate that the health care financing gaps notified in this study deserve due attention. The policy options proposed by FMOH to address the poor health care financing in Ethiopia are health insurance and social health insurance (EPHI 2014:1) could be considered as possible options for improvement. However, specific strategies targeting public hospitals need to be formulated to address financial concerns identified in the study. Since the rural households in Ethiopia are willing to enrol in community based health insurance programs (Kebede, Gebreslassie & Yitayal 2014:268; MOFED 2014:70), the Ethiopian government could shift existing budgets for strengthening capacity of public hospitals. The cost which was estimated for implementing the HSTP in the year 2015/16-2019/20 is \$177,723,169, where the highest share goes to human resource and infrastructure (FMOH 2015:100-101). From this budget, public hospitals need to secure a significant share to enhance their capacity and be equipped with innovative technologies. One of the main sources of funding for the Ethiopian health sector is the contribution from developing partners. In in 2013, a total of \$550.99 million was committed by development partners and a total of \$531.13 million (96.4%) was disbursed (Elias & Accorsi 2014:25). If the positive collaboration between the Ethiopian government and the developing partners sustain, public health sectors could safeguard the required financial resources, provided that good governance is in place more than ever before.

Regarding health workforce, 55% of the health workforce requirements were attained. Absence of job satisfaction, motivation, conducive infrastructure, timely performance feedback, and the required qualified staff were major gaps identified in public hospitals of Ethiopia. Previous studies conducted in Ethiopia also share consistent findings of the current study (Engeda et al 2014:7; Negussie 2012:111; Yama et al 2011:26; Assefa, Mosse & H/Michael 2011:101; Negussie & Costantinos 2010:82-84). Some studies also revealed that health care services Ethiopian health workforces are delivering to their patients are not satisfactory (Feysia, B, Herbst, C,

Lemma, W, Soucat, A. 2012:31; Ambelie, Demssie & Gebregziabher 2014:417). Thus, evocative strategies with huge investments in health workforces' education and training, management, retention, incentives, motivation, and job satisfaction are required to guarantee effective health care delivery across Ethiopian public hospitals.

It was reported that Ethiopian public hospitals are challenged by the lack, scarcity, and inappropriate usage of medical products and technologies (FMOH 2015:63). The current study also revealed the same. There were scarcities of drugs, medical supplies, medical apparatus and equipment in the hospitals. The movement towards initiating new practices for effective and advanced usage of technologies was poor. The hospitals' average score when compared to the requirements for appropriate use of medical drugs and technologies was 58%.

Similarly, Ethiopian public hospitals lack to exercise appropriate information communication and exchange methodologies. The reporting systems of the hospitals were shown to be complex and time-consuming. The monitoring and evaluation system already in place was also weak to appropriately capture, analyse, and disseminate information relevant to staff. The hospitals have been highly affected by lack of sufficient internet access in the hospitals, which could deactivate staff from updating their knowledge and translate to their patients. In the same sense, there have been many guidelines developed at national level for bench-level usage. However, the guidelines and other standard operating procedures were not in place as quick references. Considering all these gaps, practicable strategies need to be developed and their practicability followed.

In general, according to the multiple regression model predictors of health care delivery performance analysed in the study, the current health care delivery performance of public hospitals in Ethiopia is poor. There was association between the current health care delivery performance of the hospitals and

leadership/governance, health care financing, health workforce, medical products/technologies, information, and service delivery. All these predictors need due attention and consideration for effective health care delivery system to be in place. There were green lights reflected in the HSDP IV which has been in effect in the years 2011-2015 in that customer satisfaction could be achieved (FMOH 2015:41). The BPR health care reform attempts made by the FMOH, if properly implemented and led, could maximize efficiency, collaboration and coordination of the health sector (WHO 2014:4).

6.4. CONCLUSION

Implementation of health care reform in the form of market economic principles driven by political interests is hardly a new phenomenon in the public health care system of Ethiopia, with a couple of years of efforts to improve health care services. The Ethiopian health care reform implemented in the form of BPR had as its most important goal to improve health care services, thereby improving the health status of the Ethiopian people. The Ethiopian governments instigated the reform to divert the multiple challenges tracked from clients' complaints and on-site evaluations which witnessed a complicated structure across the health care facilities.

This study sought to provide answers to achieve the four overarching objectives of this study regarding the BPR health care reform implemented in public hospitals in Ethiopia, and to design the strategy for implementation of BPR.

Implementation of health care reform in the form of market economic principles driven by political interests is hardly a new phenomenon in the public health care system of Ethiopia, with eight years of efforts to improve health care services. The study provides evidence that the BPR health care reform implemented in public hospitals in Ethiopia, particularly in Addis Ababa, was poor in attaining the intended purpose. The implemented BPR health care reform was unable to achieve indicators

of key dimensions of health system performance, namely; access, equity, quality, efficiency, and sustainability, which maps the linkages between health sector reform, changes in health system performance, and changes in health status. The anticipated patient-provider and provider-management interactions depicted in the reform document had not been achieved. A higher rate of patient appointment time and longer patient waiting time continued to challenge the health care delivery system of the hospitals. The reform was able to restructure the hospital departments into case teams, with the major goal of adopting a “one-stop shopping” approach. However, shortages or absence of critical furniture, supplies, infrastructure, reagents and drugs continued to hamper the system. The commitment of top managements and scarcity of human and financial resources contributed to the dissatisfaction of patients and providers.

Hence, lack of adequate financial resources, top management commitment and support, training, flatter structure, IT, collaborative working environment, and organizational culture, all took part in the success and failure components of the BPR health care reform implemented in public hospitals of Ethiopia.

6.5. RECOMMENDATIONS

Based on the findings of the current study and the literature review, the following recommendations were proposed:

National, Regional, Zone and Woreda level health bureaus need to continue playing significant roles in ensuring and improving the quality of health services provided in public hospitals. The bureaus should contribute their efforts to maximize quality ensured health care access throughout the country.

The FMoH should regularly research, review, monitor, and evaluate the existing public hospital services and their performances to ensure up-to-date services.

Political commitments at this junction might be critical, though there need to be a clear demarcation between political and technical engagements. Health bureaus should periodically assess hospital performances and determine trends of performance using a standardized agreed-on survey instruments and offer feedback. It should be only through data-driven evidences that national level health policies are formulated and system redesigning taken place. Besides, whenever a system change is initiated, it should go to end-stage implementers for an open discussion and comments before implementation is initiated.

The implementers need to internalize the new system and majority accepted it to avoid resistance to change. End-stage implementers and their managers need to address reform efforts not as a short term fix but as a long term strategic goal that leads to continued growth of hospital services.

The FMoH should intensely continue providing recognition and incentives for best-performer hospitals to motivate their efforts and to insist other hospitals do the same. Similarly, hospital managements can collect data through staff and patient surveys, performance evaluations, or other needs assessment to identify areas for improvements. Public hospitals should candidly discuss with FMoH and Regional health bureaus on the impacts of new health policies and initiatives, such as the BPR reform, on performance of their services, particularly towards quality, access, efficiency, and sustainability.

Public hospitals in Ethiopia need to improve the quality of care at all levels of the health care delivery system. The public hospitals should develop and disseminate standards of quality health services across all case teams. Services provided under each case should be guided by standard operating procedures and national guidelines. For this reason, the hospitals should ensure each case team has its own standard operating procedures in place to implement and abide by.

Regular supervision systems should be established to enforce implementation of the standard operating procedures and guidelines to ensure health care is provided at a standard level. Continuous Quality Improvement (CQI) approaches should be strengthened across each case team and department to ensure internal quality assurance capacity at all levels of health services delivery.

A maximum effort needs to be made to upgrade public hospitals with up-to-date technologies. In particular, due attention should be given to hospital laboratories. Their testing capacities should be supported by advanced technologies, with the required staff well capable to apply on. In addition to national and regional laboratory quality assurance schemes that they are currently participating, public hospital laboratories should work together to carryout periodic inter-laboratory comparability testing to further their quality testing efforts.

It was noticed that patient waiting time in public hospitals has not been reduced as advised by the BPR health care reform document. The public hospitals need to strive to deliver health care services on the schedule convenient for both patients and the hospitals. They should avoid unnecessarily longer waits for clinical examinations or result distributions. Patient's dissatisfaction should be reduced through better handling of patient compliments and concerns in a pleasant manner. The hospitals should try to understand patients' expectations right in the beginning to ensure increased patient understanding. The extent of patient satisfaction or dissatisfaction with health services should be assessed regularly through surveys. The hospitals should instantly use the survey results for service improvement interventions. These could result in higher quality of care, with fewer preventable medical mistakes and malpractices. Thus, public hospitals should maintain adequate staff numbers, ensure that each case team is always covered, and ensure that staff do pay close attention to the times that people have to wait. With these, the hospitals could also reduce medical related morbidities and mortalities.

The FMoH and RHBs should continue their partnership with development partners giving various technical, administrative, and financial supports public hospitals. However, more emphasis must be placed on research, technology transfer, and share best practices than providing routine and low-level technical supports.

Public hospital staff are critical to the success of quality of care. Hospital managements need to recognize the requirements to fully engage front-line staff so that they are providing the maximum possible service. The private-wing established in public hospitals is contributing towards financing the hospitals as well as staff. This effort need to be strengthened as it helps reducing staff turnover and reduce job dissatisfaction due to salary and benefits. The recent public transportation the government has availed for public servants also needs to be valued and supported. Periodic staff retreats should be organized to reduce burn outs and stress of staff. Staff should be insisted to keep updating their knowledge through books, continuing medical educations, workshops, and conferences.

Procurement and financing of services in Ethiopian public hospitals should be in accordance with the Food, Medicine and Health Care Administration and Control Authority (FMHACA), Ministry of Finance and Economic Development (MoFED), and other national rules and procedures. The corruption suspects discovered in the study needs to be investigated deeply, and those who really did it should be corrected. The hospitals should evaluate and strengthen their supply chain management systems to ensure all the reagents, drugs, equipment, and other supplies required for the day-to-day services stock-in at all times.

In general, it was very acceptable that the Ethiopian government made its level to improve the health of its citizens through formulating the BPR health care reform. There have been many health care facilities across different countries which were able to improve their performance through implementation of BPR reforms, while there were many which failed. The researcher proposed strategies to strengthen the

BPR health care reform implemented in Ethiopia. The strategies were described in detail in Chapter five.

6.6. CONTRIBUTIONS OF THE STUDY

The finding of this study contributed to the understanding that implementation of market-driven health care reforms, particularly BPR health care reform, need careful attentions. The findings clearly identified opportunities and gaps hospitals have had in implementing the BPR health care reform. Looking the context of Ethiopia, the findings were able to inform the Ethiopian government on the status and outputs of the BPR health care reform implemented across public hospitals. The findings were able to allow the Ethiopian government capture baseline data on how deep the reform it proposes has been accepted and internalized or rejected and ignored by providers.

The strategies proposed by the researcher in support of the reform are milestones for Ethiopian government and the AAHB to enrich the quality of health care interventions through continuous review, refinement and adjustment of the reform as required. If the Ethiopian government is able to take into effect the proposed strategies, Ethiopia may then be in a good position to satisfy the health care need of its population, motivate and encourage front-line health care providers, and maximize its political stability. The data and findings of the study constituted critical information to health care administrators and providers to acquire a learning environment from their experiences to let them continue on successes but design intervention measures on health service gaps. The study could encourage public hospitals' managements identify what investments are needed and affordable to provide a complete and quality-ensured set of health care services, and assign each stakeholder in the hospitals to effect interventions and design contentious quality improvement measures. The findings will also offer background information for other researchers to continue the study on a larger target population.

6.7. LIMITATIONS OF THE STUDY

Addis Ababa is among the eleven geographic regions in the Ethiopian government structure, and is an autonomous administrative region and the largest and capital city of Ethiopia with the status both a city and state (Central Statistics Agency, 2011:4). There were 88 public hospitals throughout Ethiopia that have been implementing BPR since its start-up whereby five of them were situated in Addis Ababa and managed by the AAHB (Health & Health-related Indicators, 2008:18). Based on financial capability of the researcher, only the five public hospitals in Addis Ababa were selected to carry out the study, therefore could limit generalizability of the study findings to the total public hospitals in the country. The five public hospitals have been serving the Ethiopian citizens in multiple disease prevention, care and treatments services and dedicated as training and academic centres of excellence for decades. However, issues impacting on the generalizability of the findings by having group of hospitals in one geographic region was shortcoming of the study. Another consideration is the type of respondents. It was well-intentioned that the study included all health care providers without any discrimination among professional disciplines. However, including supporting staff in the study may further strengthen the study findings. Regardless of these limitations, the researcher collected the maximum possible sample size and conducted the study in a very professional manner.

6.8. CONCLUDING REMARKS

In light of the weak health system in Ethiopia, it is necessary to seek for better health care policies and strategies which could strengthen health service delivery capacity at the ground level. Equally, effective operational, clinical and governance functions of health systems, as well as a motivated and committed health workforce, are important to move reform processes forward.

BIBLIOGRAPHY

Adams, LY. 2015. *Workplace mental health: manual for nurse managers*. Springer Publishing company, LLC. NewYork: United States.

Adds Ababa City Administration Health Bureau (AAHB). 2008. *Standard operation procedure for the delivery of medical services*. AAHB curative services core process. Addis Ababa; Ethiopia.

Admasu, K. 2013. The implementation of the health development army: challenges, perspectives and lessons learned with a focus on Tigray's experience. *FMoH Quarterly Health Bulletin* 5(1):3-7.

Admasu, K, Tamire, A & Tsegaye, S. 2014. Envisioning the future of the health sector: an update. *FMoH Quarterly Health Bulletin* 6(1):3-12.

Africa Health Workforce Observatory (AHWO). 2010. *Human resource for health country profile: Ethiopia*. AHWO. Brazzaville; Republic of Congo.

African Development Bank Group. 2011. *Federal Democratic Republic of Ethiopia country strategic paper: 2011-2015*. African Development Bank Group. Addis Ababa; Ethiopia.

Aghdasi, M, Albadvi, A & Ostadi, B. 2010. Desired organisational capabilities (DOCs): mapping in BPR context, *International Journal of Production Research* 48(7):2029-2053.

Alebachew, Hatt, L, Kukla, M & Nakhimovsky, S. 2014. *Universal Health Coverage Measurement in a Low--Income Context: An Ethiopian Case Study*. Bethesda, MD: Health Finance & Governance Project, Abt Associates Inc..

Alhassan, RK, Spieker, N, Ostenberg, P, Ogink, A, Nketiah-Amponsah, E & Wit, TFR. 2013. Association between health worker motivation and healthcare quality efforts in Ghana. *Human Resources for Health* 11(37):1-11.

Ambelie, YA, Demssie, AF & Gebregziabher, MG. 2014. Patients' satisfaction and associated factors among private wing patients at Bahirdar Felege Hiwot Referral Hospital, North West Ethiopia. *Science Journal of Public Health* 2(5):417-423

Amjad, S. 2011. Building business process reengineering (BPR) capability: Moving toward e-government for Sakpatenti and other Georgian institutions. USAID Economic Prosperity Initiative (EPI). Tbilisi: Georgia.

Amo-Adjei, J. 2013. Perspectives of stakeholders on the sustainability of tuberculosis control programme in Ghana. *Tuberculosis Research and Treatment* 2013(419385):1-6

Andres, L. 2012. *Designing and doing survey research*. SAGE Publications Ltd. London: United Kingdom.

Asegid, A, Belachew, T & Yimam, E. 2014. Factors influencing job satisfaction and anticipated turnover among Nurses in Sidama zone public health facilities, South Ethiopia. *Nursing Research and Practice* 2014:909768:1-26.

Assefa, F, Mosse, A & H/Michael, Y. 2012. Assessment of client satisfaction with health service deliveries at Jimma University Teaching Hospital. *Ethiopian Journal of Health Science* 21(2):101-109.

Austin, WJ. 2011. The incommensurability of nursing as a practice and the customer service model: an evolutionary threat to the discipline. *Nursing Philosophy* 12:158-166.

- Barnsteiner, J, Disch, J & Walton, MK. 2014. *Person and family centred care*. Sigma Theta Tau International. Indianapolis; United States.
- Belbin, 2013. *Method, reliability & validity, statistics & research: a comprehensive review of Belbin team roles*. Belbin Associates. Cambridge; United Kingdom.
- Berhanu, D. 2013. Ethiopia: a success story of good health at low cost. *FMoH Quarterly Health Bulletin* 5(1):39-44.
- Bertelsmann Stiftung's Transformation Index (BTI). 2014. *BTI 2014 - Ethiopia country report*. Bertelsmann Stiftung. Gütersloh; Germany.
- Bertolini, M, Bevilacqua, M, Ciarapica, FE & Giacchetta, G. (2011). Business process re-engineering in healthcare management: a case study. *Business Process Management Journal* 17(1):42-66.
- Bethlehem, J & Biffignandi, S. 2012. *Handbook of Web Surveys*. John Wiley & Sons, Inc. Hoboken: New Jersey.
- Beyene, W, Jira, C & Sudhakar, M. 2011. Assessment of quality of health care in Jimma zone, southwest Ethiopia. *Ethiopian Journal of Health Sciences* 21:49-58.
- Bliemel, M & Hassanein, K. 2004. E-health: Applying business process reengineering principles to healthcare in Canada. *International Journal of E-Business* 2(6):625–643.
- Bonenberger, M, Aikins, M, Akweongo, P & Wyss, K. 2014. The effects of health worker motivation and job satisfaction on turnover intention in Ghana: a crosssectional study. *Human Resources for Health* 12(43):1-12.
- Borycki, E. 2013. Trends in health information technology safety: from technology-induced errors to current approaches for ensuring technology safety. *Healthcare Informatics Research* 19(2):69-78.

Bowling, A. 2009. *Research methods in health. Third edition*. Open University Press. New York; USA.

Bradley, EH, Byam, P, Alpern, R, Thompson, JW, Zerihun, A, Abebe, Y & Curry, LA. 2012. A Systems Approach to Improving Rural Care in Ethiopia. *PLoS ONE* 7(4): e35042:1-7.

Brixi, H, Mu, Y, Targa, B & Hipgrave, D. 2012. Engaging sub-national governments in addressing health equities: challenges and opportunities in China's health system reform. *Health Policy and Planning* 2012;1-16

Buntin, MB, Jain, SH & Blumenthal, D. 2012. Health Information Technology: laying the infrastructure for national health reform. *Health Affairs* 29(6):1214-1219.

Burke, RJ, Ng, EWS & Wolpin, J. 2011. Hospital restructuring and downsizing: Effects on nursing staff well-being and perceived hospital functioning. *Europe's Journal of Psychology* 7(1):81-98.

Butler-Henderson, K. 2010. Health Reform, Health Data and the Health Information Manager. *Health Information Management Journal* 39(2):7-8.

Caccia-Bava, MC, Guimaraes, VCK & Guimaraes, T. 2012. Important factors for success in hospital BPR project phases. *International Journal of Health Care Quality Assurance* 26(8):729-745.

Calhoun, A, Mainor, A, Moreland-Russell, S, Maier, RC, Brossart, L & Luke, DA. 2014. Using the program sustainability assessment tool to assess and plan for sustainability. *Preventing Chronic Disease* 11:130185

Campbell, J & Settle, D. 2009. *Ethiopia: taking forward action on Human Resources for Health (HRH) with DFID/OGAC and other partners*. Capacity Project. Chapel Hill; USA.

Carman, KG & Eibner, C. 2014. *Changes in Health Insurance Enrolment since 2013: evidence from the RAND Health Reform Opinion Study*. RAND. Santa Monica, CA:.

Cattaneo, C, Galizzi, G & Bassani, G. 2012. Efficiency as a domain of health care systems: a phenomenographic approach. *Advances in Health Care Management* 13:161-188.

Central Statistical Agency of Ethiopia (CSA). 2012. *Ethiopia demographic and health survey 2011*. CSA, Addis Ababa; Ethiopia, and ICF International, Calverton; USA.

Chiarini, A. 2011. Japanese total quality control, TQM, Deming's system of profound knowledge, BPR, Lean and Six Sigma Comparison and discussion. *International Journal of Lean Six Sigma* 2(4):332-355.

Chigbo, ND. 2013. Business process reengineering (BPR) in contemporary organizations: concept, success factors and challenges. *International Journal of Management, IT and Engineering* 3(11):227-237.

Chuma, J & Okungu, V. 2011. Viewing the Kenyan health system through an equity lens: implications for universal coverage. *International Journal for Equity in Health* 10(22):1-14.

Clemens, T, Michelsen, K, Commers, M, Gareil, P, Dowdeswell, B & Brand, H. 2014. European hospital reforms in times of crisis: Aligning cost containment needs with plans for structural redesign? *Health Policy* 117(1):6-14.

Clifford, N, French, S & Valentine, G. 2010. *Key Methods in Geography*. 2nd edition. Oliver's Yared: London.

Cole, ZD, D, Donohoe, HM & Stellefson, ML. 2013. Internet-Based Delphi Research: Case Based Discussion. *Environmental Management* 51(3):511-523.

Comber, JA, Brunson, C & Radburn, R. 2011. A spatial analysis of variations in health access: linking geography, socio-economic status and access perceptions. *International Journal of Health Geographics* 10(44):1-11.

Connaway, LS & Powell, RR. 2010. *Basic research methods for librarians*. Fifth edition. ABC-CLIO, LLC. Santa Barbara: California.

Creswell, JW. 2009. *Research design: qualitative, quantitative, and mixed methods approaches*. 3rd ed. Sage Publications, CA; United States.

Debela, T. 2009. Business process reengineering in Ethiopian public organizations: the relationship between theory and practice. *Journal of Business and Administrative Studies* 1(2):20-59.

Dorgan, S, Layton, D, Bloom, N, Homkes, R, Sadum, R & Keenen, JV. 2013. *Management in Healthcare: why good practice really matters*. McKinsey & Company. New York, United States.

Eftekhari, N & Akhavan, P. 2013. Developing a comprehensive methodology for BPR projects by employing IT tools. *Business Process Management Journal* 19(1):4-29.

Elias, N, Accorsi, S. 2013. Countdown to 2015: the performance of the health sector in the second year of HSDP IV (EFY 2004). *FMoH Quarterly Health Bulletin* 5(1):21-28.

Elias, N & Accorsi, S. 2014. The last lap towards millennium development goals: the performance of the health sector in EFY 2005 *FMoH Quarterly Health Bulletin* 6(1):13-26.

Engeda, EH, Birhanu, AM & Alene, KA. 2014. Intent to stay in the nursing profession and associated factors among nurses working in Amhara Regional State Referral Hospitals, Ethiopia. *BMC Nursing* 13(24):1-8.

Esteves RJF. 2012. The quest for equity in Latin America: a comparative analysis of the health care reforms in Brazil and Colombia. *International Journal for Equity in Health* 11(6):1-16.

Ethiopian Health and Nutrition Research Institute (EHNRI). 2010. *A five year balanced score card based strategic plan (2010-2015)*. EHNRI. Addis Ababa; Ethiopia.

Ethiopian Midwives association (EMA). 2012. *The state of the Ethiopia's Midwifery 2012: based on Ethiopian midwives association database*. Ethiopian Midwives association and United Nations Population Fund. Addis Ababa, Ethiopia.

Ethiopian Public Health Institute (EPHI). 2014. *Improving health care financing in Ethiopia: an evidence brief for policy*. EPHI. Addis Ababa: Ethiopia.

European Commission. 2011. *Health services research: helping tackle Europe's health care challenges: Policy brief*. European Commission's Seventh Framework Programme. Utrecht; Netherlands.

European Union (EU). 2010. *European textbook on ethics in research*. Publications office of the European Union; Luxembourg, Belgium.

Fan, W & Geerts, F. 2011. *Foundations of data quality management*. Morgan & Claypool Publishers.

Faye, A, Fournier, P, Diop, I, Philibert, A, Morestin, F, & Dumont, A. 2013. Developing a tool to measure satisfaction among health professionals in sub-Saharan Africa. *Human Resources for Health* 11(30):1-11.

Federal Democratic Republic of Ethiopia Ministry of Health (FMoH). 2009. *Ethiopia health sector development programme Mid-term review of HSDP III*. FMoH. Addis Ababa; Ethiopia.

Federal Democratic Republic of Ethiopia Ministry of Health (FMoH). 2010. *Health Sector Development Program IV, 2010/11 – 2014/14*. FMOH. Addis Ababa; Ethiopia.

Federal Democratic Republic of Ethiopia Ministry of Health (FMoH). 2013. *Health Sector Development Programme IV Annual Performance Report: EFY 2005 (2012/13), Version 1*. FMoH. Addis Ababa; Ethiopia.

Federal Democratic Republic of Ethiopia Ministry of Health (FMoH). 2014. *Ethiopia's Fifth National Health Accounts 2010/2011*. FMoH. Addis Ababa; Ethiopia.

Federal Democratic Republic of Ethiopia Ministry of Health (FMoH). 2015. *Health Sector Transformation Plan HSTP: 2015/16-2019/20*. FMoH. Addis Ababa; Ethiopia.

Federal Democratic Republic of Ethiopia Ministry of Health (FMoH). 2007. *Standards for access and quality of health service*. FMoH. Addis Ababa; Ethiopia.

Federal Democratic Republic of Ethiopia Ministry of Health (FMoH). 2009. *Ethiopia health sector development programme Mid-term review of HSDP III*. FMoH. Addis Ababa; Ethiopia.

Federal Democratic Republic of Ethiopia Ministry of Health (FMoH). 2010. *Health Sector Development Program IV, 2010/11 – 2014/14*. FMOH. Addis Ababa; Ethiopia.

Federal Democratic Republic of Ethiopia Ministry of Health (FMoH). 2014. *Ethiopia's Fifth National Health Accounts 2010/2011*. FMoH. Addis Ababa; Ethiopia.

Federal Democratic Republic of Ethiopia Ministry of Health (FMoH) Policy and Planning Directorate. 2014. *Visioning beyond: Revised policy and health sector transformation plan*. FMoH. Addis Ababa; Ethiopia.

Fee, JF. 2012. *Quantitative methods in action research*. Palgrave Macmillan. New York: United States.

Feldman, AM. 2012. *Understanding health care reform: bringing the gap between myth and reality*. Tayler & Francis Group. Boca Raton; FL

Feysia, B, Herbst, C, Lemma, W, Soucat, A. 2012. *The Health Workforce in Ethiopia: Addressing the Remaining Challenges*. The World Bank. Washington, D.C; United States.

Flessa, S, Moeller, M, Ensor, T & Hornetz, K. 2011. Basing care reforms on evidence: The Kenya health sector costing model. *BMC Health Services Research* 11(128):1-15

Fortney, JC, Burgess, JF, Bosworth, HB, Booth, BM & Kaboli, PJ. 2010. A re-conceptualization of access for 21st century healthcare. *Journal of General Internal Medicine* 26(2):639-647.

Frumence, G, Nyamhanga, T, Mwangu, M & Hurtig, A. 2013. Challenges to the implementation of health sector decentralization in Tanzania: experiences from Kongwa district council. *Global Health Action* 6(20983):1-11.

Galarraga, JE & Pines, JM. 2013. Anticipated changes in reimbursements for US outpatient emergency department encounters after health reform. *Annals of Emergency Medicine* 63(4):412-417.

Gebretekle, GB & Fenta, TG. 2013. Assessment of pharmacists workforce in Ethiopia. *Ethiopian Journal of Health Development* 27(0):1-11.

Gerrish, K & Lacey, A. 2010. *The Research Process in Nursing*. 6th edition. Blackwell Publishing Ltd. West Sussex: United Kingdom.

Getahun, SA & Balcha, A. 2012. Indigenous Healing Practices in Ethiopia, In *the manual of Ethiopian medical history*. People to People, Inc. Morehead; United states. 15-18

Ghannouchi, SA, Mabrouk, K & Ghannouchi, S. 2010. Proposal of data warehouse in the context of healthcare process reengineering. *Business Process Management Journal* 16(4):688-712.

Ghosh, S. 2014. Health sector reforms and changes in prevalence of untreated morbidity, choice of healthcare providers among the poor and rural population in India. *International Journal of Health Policy and Management* 2(3):125-130

Global Health Initiative (GHI). 2011. *Ethiopia Global Health Initiative Strategy*. The U.S. Ethiopia GHI Team. Addis Ababa/ Washington, DC.

Goksoy, A, Ozsoy, B & Vayvay, O. 2012. Business Process Reengineering: Strategic tool for managing organizational change an application in a multinational company. *International Journal of Business and Management* 7(2):89-112.

Gopalan, SS, Mohanty, S & Das, A. 2011. Challenges and opportunities for policy decisions to address health equity in developing health systems: case study of the policy processes in the Indian state of Orissa. *International Journal for Equity in Health* 10(55):1-11.

Gratton, C & Jones, I. 2010. *Research Methods for Sports Studies*. Routledge. New York: United States.

Grove, SK, Burns, N & Gray, JR. 2013. *The practice of nursing research: appraisal, synthesis, and generation of evidence*. 7th edition. ELSEVIER. St Louis, MO: Saunders.

Habib, MN & Shah, A. 2013. Business Process Reengineering: literature review of approaches and applications. Proceedings of 3rd Asia-Pacific Business Research Conference. Kuala Lumpur, Malaysia.

Habib, MN & Wazir, MI. 2012. Role of education and training in the successful implementation of business process reengineering: a case of public sector of Khyber Pakhtunkhwa (KPK). *World Journal of Social Sciences* 2(2):172-185.

Haghighat, F & Mohammadi, M. 2012. Designing the Model of Effective Factors on Acceptance of Business Process Reengineering (BPR) Case study: Isfahan Municipality. *Interdisciplinary Journal of Contemporary Research in Business* 3(9):281-289.

HaileMariam, D. 2010. Prospects for self-reliance in the provision of public health services. *Ethiopian Journal of Health Development* 24(1):1-2

HaileMariam, D. 2011. Bridging the availability-utilization gap: The issue of quality in the provision of health care. *Ethiopian Journal of Health Development* 25(1):1-2.

Haj, HIE, Lamrini, M & Rais, N. 2013. Quality of care between Donabedian model and ISO9001V2008. *International Journal for Quality Research* 7(1):17-30.

Hamric, AB, Hanson, CM, Tracy, MF, O'Grady, ET. 2014. *Advanced practice nursing: an integrative approach. 5th edition*. Elsevier. St. Louis: United States.

Hammersley, M & Traiano, A. 2012a. *Ethics in Qualitative Research: Controversies and Contexts*. SAGE Publications Ltd. London: United Kingdom.

Hammersley, M & Traianou, A. 2012b. *Ethics and Educational Research*. British Educational Research Association. London: United Kingdom.

Healthcare Quality Improvement Partnership (HQIP). 2015. *A guide to quality improvement methods*. Healthcare Quality Improvement Partnership Ltd. London: United Kingdom.

Hipgrave, D, Guo, S, Mu, Y, Guo, Y, Yan, F, Scherpbier, R & Brixi, H. 2012. Chinese-Style Decentralization and Health System Reform. *PLoS Med* 9(11): e1001337:1-4.

Hsu, J. 2010. *The relative efficiency of public and private service delivery*. World Health Report, Background Paper, No 39.

Hudson, CG & Vissing, YM. 2013. Sustainability at the edge of chaos: its limits and possibilities in public health. *BioMed Research International* 2013:801614:1-7

Hvenegaard, A, Gyrd-Hansen, D, Arendt, J, Sørensen, TH, Laustsen, J & Jensen, LP. 2010. *Does better structure and process management provide higher outcome quality for the individual patient and among Danish hospital departments?* Health Economics Papers: 3. University of Southern Denmark. Campusvej; Denmark.

Institute of Medicine (IOM). 2013. *Delivering high quality cancer care: charting a new course for a system in crisis*. The National Academic Press. Wasington DC; United States.

Jadoo, SAA, Aljunid, SM, Sulku, SN & Nur, MA. 2014:8. Turkish health system reform from the people's perspective: a cross sectional study. *BMC Health Services Research* 14(30):1-9.

Jamali, G, Abbaszadeh, MA, Ebrahimi, M & Maleki, T. 2011. Business process reengineering implementation: developing a causal model of critical success factors. *International Journal of e-Education, e-Business, e-Management and e-Learning* 1(5):354-359.

Jiang, M, Yang, S, Yan, K, Liu, J, Zhao, J & Fang Y. 2013. Measuring access to medicines: a survey of prices, availability and affordability in Shaanxi province of China. *PLoS ONE* 8(8):e70836:1-8.

Johnson, B & Christensen, L. 2012. *Educational Research: Quantitative, Qualitative, and Mixed Approaches*. 4th edition. SAGE Publications, Inc. California: United States.

Jordan-Marsh, M. 2011. *Health Technology Literacy: A Transdisciplinary Framework for Consumer-oriented practice*. Jones & Bartlett Learning. Sudbury; MA.

Källén, A. 2011. *Understanding Biostatistics*. John Wiley & Sons, Ltd. Chichester: United Kingdom.

Kassaye, KD, Amberbir, A, Getachew, B & Mussema, Y. 2006. A historical overview of traditional medicine practices and policy in Ethiopia. *Ethiopian Journal of Health Development*. 20(2):127-134.

Kebede, A, Gebreslassie, M & Yitayal, M. 2014. Willingness to pay for community based health insurance among households in the rural community of Fogera District, North West Ethiopia. *International Journal of Economics, Finance and Management Sciences* 2(4):263-269

Keeney, S, Hasson, M & Mckenna, H. 2011. *The Delphi technique in nursing and health research*. Blackwell publishing. West Sussex, United Kingdom.

Keller, DK & Casadevall-Keller, ML. 2010. *The tao of research: a path to validity*. SAGE Publications. Thousand Oaks: United States.

Khorsan, R & Crawford, C. 2014. How to assess the external validity and model validity of therapeutic trials: a conceptual approach to systematic review methodology. *Evidence-Based Complementary and Alternative Medicine* 2014:694804:1-12.

Kitaw, Y, Teka, G, Meche, H, Hailemariam, D & Fantahun, M. 2012. *The evolution of public health in Ethiopia*. 2nd ed. Ethiopian Public Health Association. Addis Ababa; Ethiopia.

Knowles, JC, Leighton, C & Stinson, W. 1997. *Measuring Results of Health Sector Reform for System Performance: A Handbook of Indicators*. Special Initiatives Report No. 1. Partnerships for Health Reform, Abt Associates. Bethesda; MD.

Kumar, D & Bhatia, A. 2012. BPR - organization culture, best practices and future trends. *International Journal of Computer Applications* 44(23):1-6.

Kumar, R. 2011. *Research Methodology: a step-by-step guide for beginners*. SAGE Publications, Inc. California: United States.

Lapão, VL & Dussault, G. 2012. From policy to reality: clinical managers' views of the organizational challenges of primary care reform in Portugal. *International Journal of Health Planning & Management* 27:295-307.

Lega, F, Prenestini, A & Spurgeon, P. 2013. Is Management Essential to Improving the Performance and Sustainability of Health Care Systems and Organizations? A Systematic Review and a Roadmap for Future Studies. *Value in health* 16:46-51.

Leggat, SG, Bartram, T & Stanton, P. 2011. High performance work systems: the gap between policy and practice in health care reform. *Journal of Health Organization and Management* 25(3):281-297.

Levesque, J, Harris, MF & Russell, G. 2013. Patient-centred access to health care: conceptualising access at the interface of health systems and populations. *International Journal for Equity in Health* 12(18):1-9.

Llano-Señarís,JE & Campillo-Artero C. 2015. *Health technology assessment and health policy today: a multifaceted view of their unstable cross-roads*. Springer. New York Dordrecht; London.

Lindenau-Stockfisch, V. 2011. *Lean Management in Hospitals: Principles and Key Factors for Successful implementation*. Bachelor + Master Publishing. Hamburg, Diplomica Verlag GmbH.

Liu, JA, Wang, Q & Lu, ZX. 2010. Job satisfaction and its modelling among township health centre employees: a quantitative study in poor rural China. *BMC Health Services Research* 10(115):1-9.

Lodico, MG, Spaulding, DT & Voegtle, KH. 2010. *Methods in Educational Research: From Theory to Practice*. John Wiley & Sons, Inc. Danvers: United States.

Lowrance, WW. 2012. *Privacy, Confidentiality, and Health Research*. Cambridge University Press. Cambridge: United Kingdom.

Lutwama, GW, Roos, JH, Dolamo, BL. 2012. A descriptive study on health workforce performance after decentralisation of health services in Uganda. *Human Resources for Health* 10(41):1-10.

Magnavita, N, Fileni, A, Bergamaschi, A. 2009. Satisfaction at work among radiologists. *La radiologia medica* 114(8):1330-1344.

Maleki, T & Beikkhakhian, Y. (2011). *Business process reengineering implementation: an investigation of critical success factors*. International Conference on Information and Finance, IPEDR 21, Singapore.

Martin, GP, Weaver, S, Currie, G, Finn, R & McDonald, R. 2012. Innovation sustainability in challenging health-care contexts: embedding clinically led change in routine practice. *Health Service Management Research* 25:190-199.

Mascia, D & Vincenzo, FD. 2011. Understanding hospital performance: the role of network ties and patterns of competition. *Health Care Manage Review* 36(4), 327-337

Mathile, C. 2013. *Run your business, don't let it run you*. Berrett-Koehler Publisher, Inc. California, United States.

Mbacke, CSM. 2013. African leadership for sustainable health policy and systems research. *BMC Health Services Research* 13(2):1-3.

McCarthy, DM, Engel, KG, Buckley, BA, Huang, A, Acosta, F, Stancati, J, Schmidt, MJ, Adams, JG & Cameron, KA. 2014. Talk-time in the emergency department: duration of patient-provider conversations during an emergency department visit. *Journal of Emergency Medicine* 47(5):513-519.

McCollum, R, Chen, L, ChenXiang, T, Liu, X, Starfield, B, Jinhuan, Z & Tolhurst, R. 2014. Experiences with primary healthcare in Fuzhou, urban China, in the context of health sector reform: a mixed methods study. *International Journal of Health Planning & Management* 29:107-126.

McHugh, M, Dyke, KV, McClelland, M & Moss, D. 2011. *Improving Patient Flow and Reducing Emergency Department Crowding: A Guide for Hospitals*. Agency for Healthcare Research and Quality. Rockville: Maryland.

McNatt, Z, Thompson, JW, Mengistu, A, Tatek, D, Linnander, E, Ageze, L, Lawson, R, Berhanu, N & Bradley, EH. 2014. Implementation of hospital governing boards: views from the field. *BMC Health Services Research* 14(178):1-9.

Mehari, E, Gebeyehu, K & Asfaw, Z. 2012. *The manual of Ethiopian medical history*. People to People. Morehead; United states.

Menberu, AW. 2013. The ups and downs of Business Process Re-engineering (BPR): a tale of two offices in Bahir Dar town, Ethiopia. *1st Annual International Interdisciplinary Conference Proceedings, 24-26 April, Azores: Portugal*.

Ministry of Finance and Economic Development of Ethiopia (MoFED) and United Nation Country Team (UNCT). 2012. *Assessing progress towards the Millennium Development Goals; Ethiopia MDGs report 2012*. MoFED and UNCT. Addos Ababa; Ethiopia.

Ministry of Finance and Economic Development of Ethiopia (MoFED). 2012. *Assessing progress towards the millennium development goals: Ethiopia MDGs report 2012*. MoFED. Addis Ababa; Ethiopia.

Mlay, SV, Zlotnikova, I & Watundu, S. 2013. A quantitative analysis of business process reengineering and organizational resistance: the case of Uganda. *The African Journal of Information Systems* 5(1):1-27.

Mohapatra, S. 2013. *Business Process Reengineering: automation decision points in process reengineering*. Springer Science and Media. New York: United States.

Mosquera, PA, Hernández, J, Vega, R, Labonte, R, Sanders, D, Dahlblom, K & Sebastián, MS. 2013. Challenges of implementing a primary health care strategy in a context of a market-oriented health care system: the experience of Bogota, Colombia. *International Journal of Health Planning & Management* DOI: 10.1002/hpm.2228.

Negussie, N. 2012. Relationship between rewards and nurses' work motivation in Addis Ababa hospitals. *Ethiopian Journal of Health Science* 22(2):107-112.

Negussie, N & Costantinos, BT. 2010. *An analysis of factors affecting performance of nurses in public hospitals and health centres in Addis Ababa*. MA thesis. Addis Ababa University. Addis Ababa; Ethiopia.

Netjes, M, Mans, RS, Reijers, HA, Wil, MP & Vanwersch, GJB. 2010. BPR best practices for the healthcare domain. *Business Process Management 2009 Workshops* 43:605–616.

Nisar, QA, Ahmad, S & Ahmad, U. 2014. Exploring Factors that Contribute to Success of Business Process Reengineering and Impact of Business Process Reengineering on Organizational Performance: A Qualitative Descriptive study on Banking Sector at Pakistan. *Asian Journal of Multidisciplinary Studies* 2(6):219-224.

Offredy, M & Vickers, P. 2010. *Developing a Healthcare Research Proposal: An Interactive Student Guide*. Wiley-Blackwell Publishing. London; United Kingdom.

Okuonzi, PV. 2007. Learning from failed health reform in Uganda. *British Medical Journal* 329(13):1173-1176.

Olberg, B, Perleth, M & Busse, R. 2014. The new regulation to investigate potentially beneficial diagnostic and therapeutic methods in Germany: Up to international standard? *Health Policy* 117:135-145

Oliver, P. 2010. *The students guide to research ethics*. 2nd edition. McGraw-Hill Companies. Berkshire: England.

Olson, RP. 2012. *Moral arguments for universal health care: a vision for health care reform*. AuthorHouse, Bloomington.

Onwubere, CH & Esiri, M. 2012. *Foundations of communication research*. National open university of Nigeria. Lagos: Nigeria.

Orem, JN & Zikusooka, CM. 2010. Health financing reform in Uganda: how equitable is the proposed national health insurance scheme? *International Journal for Equity in Health* 9(23):1-8

Oxford Dictionaries. 2013. Initiative. Oxford dictionaries, Oxford University Press.

Palinkas, LA, Ell, K, Hansen, M, Cabassa, L & Wells, A. 2010. Sustainability of collaborative care interventions in primary care settings. *Journal of Social Work* 11(1):99-117.

Paul, O. 2012. *Succeeding with your literature review: a handbook for students: A handbook for students*. Open University Press. Berkshire; England.

Paolucci, F. 2011. *Health care financing and insurance: options for design*. Springer. Berlin: Heidelberg.

Polluste, K, Kallikorm R, Meiesaar, K & Lember, M. 2012. Satisfaction with access to health services: the perspective of Estonian patients with rheumatoid arthritis. *The Scientific World Journal* 2012:257569:1-10.

Productivity Commission. 2013. *On efficiency and effectiveness: some definitions*. Commonwealth of Australia. Melbourne: Australia.

Prologo, JD & Meltzer, CC. 2014. Health Care Reform in the United States: An Opportunity for Interventional Radiologists. *Journal of Vascular & Interventional Radiology* 25(6):881-887.

Radley, D. 2014. Evidence of the importance of specialist nursing care dealing with patients with feet at risk of tissue damage. Possible implications for reforms of NHS hospital care? *Journal of Tissue Viability* 23(1):42-43.

Ramana, GNV. 2013. *Ethiopia Health MDG Support Operation: P123531 - Implementation status results report: Sequence 02*. World Bank. Washington, DC; United States.

Ramanigopal, CS, Palaniappan, G, Hemalatha, N & Murugan, T. 2011. Business process reengineering and its applications. *International journal of management research and review* 1(5):275-288

Ramesh, M, Wu, X & He, AJ. 2013. Health governance and healthcare reforms in China. *Health Policy and Planning* 2013:1-10.

Rasoulia, M, Bazrafshan, H & Shabani, MR. 2013. An Algorithm for Reengineering. *WSEAS Transactions on Environment & Development* 9(2):92-104.

Rechel, B, Ahmedov, M, Akkazieva, B, Katsaga, A, Khodjamurodov, G & McKee, M. 2012. Lessons from two decades of health reform in Central Asia. *Health Policy and Planning* 27:281-287.

Reis, HT & Judd, CM. 2014. *Handbook of research methods in social and personality psychology*. 2nd edition. Cambridge University Press. New York: Unites States.

Restuccia, JD, Cohen, AB, Horwitt, JN & Shwartz, M. 2012. Hospital implementation of health information technology and quality of care: are they related? *BMC Medical Informatics and Decision Making* 12(109):1-8.

Rice, JJ & Harris BW. 2014. A proposal to reroute and reform the healthcare money trail. *The American Journal of Surgery* 207(6):996-999.

Rigbay, DK. 2013. *Management tools 2013: an executive's guide*. Bain & Company Inc. Boston; MA.

Roberts, J, Feilzer, M & Hough, M. 2012. Measuring Public Attitudes to Criminal Justice, In *the SAGE Handbook of Criminological Research Methods*. SAGE Publications Ltd. London: United Kingdom. 282-297.

Roberts, P & Priest, H. 2010. *Health care research: a textbook for students and practitioners*. John Wiely & Sons Ltd. West Sussex: United Kingdom.

Ross, T. 2012. *A survival guide for health research methods*. Open University Press. Berkshire: England.

Rubin, A & Babbie, E. 2013. *Essential research methods for social work*. 3rd edition. Brooks/Cole, Cengage Learning. Belmont: United States.

Saad, GH. 2010. Empirically-based rules and extensions for improving business process reengineering practice. *APUBEF proceedings* 1-8.

Salimi, MP. 2011. A Descriptive-Correlation Research to Explain Potential of BPR. *Chinese Business Review* 10(7):516-525.

Salkind, NJ. 2010. *Encyclopaedia of research design*. Volume 3. SAGE Publications, Inc. California: United States.

Satyanarayana, GM, Ramakrishna, HV & Jayadeva, CT. 2012. Business process reengineering for Indian rural health care sector using data environment analysis technique. *International Journal of Scientific and Research Publications* 2(5):1-6.

Scheaffer, RL, Mendenhall, W, Ott, RL & Gerow, KG. 2011. *Elementary survey sampling, 7th edition*. Cengage Learning. Toebben Drive: United Kingdom.

Scheirer, MA & Dearing, JW. 2011. An agenda for research on the sustainability of public health programs. *American Journal of Public Health* 101(11):2059-2067.

Sen, K & Al-Faisal, W. 2013. Reforms and emerging noncommunicable disease: some challenges facing a conflict-ridden country – the case of the Syrian Arab Republic. *International Journal of Health Planning & Management* 28:290-302

Senkubuge, F, Modisenyane, M & Bishaw, T. 2014. Strengthening health systems by health sector reforms. *Glob Health Action* 7:23568:1-7.

Senyonjo, M. 2012. *The African Regional Human Rights System. 30 Years after the African Charter on Human and Peoples' Rights*. Koninklijke Brill NV. Leiden: Netherland.

Serra, D, Serneels, P, Barr, A. 2010. Intrinsic Motivations and the Non-Profit Health Sector: Evidence from Ethiopia. *IZA Discussion Paper Series* 4746:1-23

Sharp, AL, Cobb, EM, Dresden, SM, Richardson, DK, Sabbatini, AK, Sauser, K, Kocher, KE. 2014. Understanding the value of emergency care: a framework incorporating stakeholder perspectives. *The Journal of Emergency Medicine* DOI: 10.1016/j.jemermed.2014.04.017; 1-10

Shim, SJ & Kumar, A. 2010. Simulation for emergency care process reengineering in hospitals. *Business Process Management Journal* 16(5):795-805.

Simonds, VW, Christopher, S, Sequist, TD, Colditz, GA & Rudd, RE. 2011. Exploring patient-provider interactions in a Native American community. *Journal of Health Care for the Poor and Underserved* 22(3):836-852.

Sinha IP, Smyth, RL & Williamson PR. 2011. Using the Delphi Technique to determine which outcomes to measure in clinical trials: recommendations for the future based on a systematic review of existing studies. *PLOS Medicine* 8(1):1-5.

Sinimole, KR. 2012. Evaluation of the efficiency of national health systems of the members of World Health Organization. *Leadership in Health Services* 25(2):139-150.

Sisaye, S & Birnberg, JG. 2012. *Organizational Development (OD) and Organizational Transformation (OT) Process Innovation Strategies*, Chapter 5, in Sisaye, S, Jacob, G & Birnberg, JG (ed.). *An Organizational Learning Approach to Process Innovations: The Extent and Scope of Diffusion and Adoption in Management Accounting Systems (Studies in Managerial and Financial Accounting, Volume 24)*, Emerald Group Publishing Limited, pp.71-86. Bingley, United Kingdom.

Skolnik, R. 2015. *Global Health 101. 3rd edition*. Jones & Bartlett Publishers. Burlington: MA.

Smith, PC. 2012. What is the scope for health system efficiency gains and how can they be achieved? *Eurohealth incorporating Euro Observer* 18(3):3-7.

Sobhani, A & Beheshti, MTH. 2010. Information Technology and BPR: From effective investment to efficient contribution in a Governmental Company. *Proceedings of the 2010 Industrial Engineering Research Conference*. Cancún; Mexico.

- Srikanth, A. 2012. Significance of BPR & ERP implementation in healthcare industry: an exploratory research. *International Journal of Management and Strategy* 3(5):1-13.
- Starfield, B. 2011. *Structure, process, and outcome in health system improvement*. The Johns Hopkins University. Baltimore; United States.
- Sturdy, GR. 2010. *Business Process Reengineering: Strategies for Occupational Health and Safety*. Cambridge Scholars Publishing. Newcastle: United Kingdom.
- Svaljek, S. 2014. The recent health reform in Croatia: True reforms or just a fundraising exercise? *Health Policy* 115:36-43.
- Tadesse, L & Ardalan, A. 2014. Health sector initiatives for disaster risk management in Ethiopia: a narrative review. *PLOS Currents Disasters* 1:1-14.
- Taket, AR. 2012. *Health Equity, Social Justice and Human Rights*. Routledge. Abingdon: Oxon.
- Tang, S, Brixi, H & Bekedam, H. 2013. Advancing universal coverage of healthcare in China: translating political will into policy and practice. *International Journal of Health Planning & Management* 29:160-174.
- Thompson, SK. 2012. *Sampling*. John Wiley & Sons. Hoboken: New Jersey.
- Tyler, BA. 2010. *The handbook of social work research methods*. 2nd edition. SAGE Publications, inc. California, United States.
- Vena, WP, Beckb, K, Buchnerc, F, Schokkaerte, E, Schuta, FT, Shmuelif, A & Wasemg, J. 2013. Preconditions for efficiency and affordability in competitive healthcare markets: Are they fulfilled in Belgium, Germany, Israel, the Netherlands and Switzerland? *Health Policy* 109:226-245.

Vogel, JP, Oxman, AD, Glenton, C, Rosenbaum, S, Lewin S, Gülmezoglu, AM & Souza, JP. 2013. Policymakers' and other stakeholders' perceptions of key considerations for health system decisions and the presentation of evidence to inform those considerations: an international survey. *Health Research Policy and Systems* 11(19):1-9.

Walker, J & Almond, P. 2010. *Interpreting statistical findings: a guide for health professionals and students*. Open University Press. Berkshire: England.

Wamai, RG. 2009. Reviewing Ethiopia's Health System Development. *Japan Medical Association Journal* 52(4):279-286.

Wasen, K. 2013. *Emerging health technology: relocation of innovative visual knowledge and expertise*. Springer. Heidelebrg: London.

Wicker, D. 2011. *Job Satisfaction: fact or fiction*. AuthorHouse. United States.

Wilunda, C Putoto, G, Manenti, F, Castiglioni, M, Azzimonti, G, Edessa, W, Atzori, A, Merialdi, M, Betrán, AP, Vogel, J and Criel, B. 2013. Measuring equity in utilization of emergency obstetric care at Wolisso Hospital in Oromiya, Ethiopia: a cross sectional study. *International Journal for Equity in Health* 12(27):1-8

World Bank. 2013. *Ethiopia - Health Millennium Development Goals Program-for-Results Project: summary of discussion*. World Bank. Washington DC; United States.

World Economic Forum (WEF). 2013. *Sustainable Health Systems Visions, Strategies, Critical Uncertainties and Scenarios: A report from the World Economic Forum*. WEF and McKinsey & Company. Geneva; Switzerland.

World Health Organization (WHO). 2010. *Monitoring the building blocks of health systems: a handbook of indicators and their measurement strategies*. WHO. Geneva, Switzerland.

World Health Organization. 2014. *Success factors in women's and children's health: mapping pathways to progress Ethiopia*. WHO. Geneva: Switzerland.

Yami, A, Hamza, L, Hassen, A, Jira, C, Sudhakar, M. 2011. Job satisfaction and its determinants among health workers in Jimma university specialized hospital, southwest Ethiopia. *Ethiopian Journal of Health Science* 21:19-27.

Yan, F, Tang, S & Zhang, J. 2014. Global implications of China's healthcare reform. *International Journal of Health Planning & Management* DOI: 10.1002/hpm.2252

Yasin, M, Augusto, M, Lisboa, J & Miller, P. 2011. Assessing the competitive effectiveness of hospitals: The role of quality improvement initiatives. *Total Quality Management & Business Excellence* 22(4):433-442.

Yasin, MM, Gomes, CF & Milller, PE. 2011. Competitive strategic grouping for hospitals. *The Total Quality Management Journal* 23(3):301-312.

Yu, K. 2011. *Measuring efficiency and cost effectiveness of health care sector. In essays on the theory and practice of index numbers: the making of macroeconomics data*, VDM Verkag. Ontario; Canada.

Zeleeuw, H. 2012. *Health care financing reform in Ethiopia: improving quality and equity*. United States Agency for International Development, Health Systems 20/20, Abt Associates Inc. MD; United States.

Zewdneh, D, W/Michael, K, Kebede, S. 2011. Communication skills of physicians during patient interaction in an in-patient setting at Tikur Anbessa Specialized Teaching Hospital (TASH), Addis Ababa, Ethiopia, 2009. *Ethiopian Journal of Health Development* 25(1):3-9.

Zhang, X, Xiong, Y, Ye, J, Deng, Z & Zhang, X. 2013. Analysis of government investment in primary healthcare institutions to promote equity during the three-year health reform program in China. *BMC Health Services Research* 13(114):1-6.

Zinsstag, J, Schelling, E, Waltner-Toews, D, Whittaker, M & Tanner, M. 2015. *One Health: The Theory and Practice of Integrated Health Approaches*. CAB International. Nosworthy Way, United Kingdom.

Questionnaire

An analysis of the implementation of business process reengineering health care reform initiative in Ethiopia

Dear Colleagues,

Thank you for devoting your time to complete this questionnaire. I, Tsegahun Manyazewal Musse, am currently studying for Doctor of Literature and Philosophy (PhD) in Health Studies at the University of South Africa College of Human Sciences, and I am expected to conduct a research as required for fulfilment. The main purpose of my study is to explore and propose strategies to support the implementation of the business process reengineering health care reform in Ethiopia.

The target population of this study is all health care professionals that are currently working in public hospitals of Addis Ababa.

Your opinions are very important to the success of this study, and I trust you will give me honest and valuable answers. Once the collected data are analysed and publicized, there will be a room for improvement of hospital services.

All the information you give will be managed with strict confidentiality, and your anonymity will be maintained at all times. Nobody, except the principal Investigator, will see your questionnaire once you submitted. Your participation in this study is voluntary, and you are not required to write your name. You have the right to refuse filling the questionnaire or hold submission of the filled questionnaire anytime.

I am grateful for your participation and I will gladly share this study with you once it is completed. Please participate by completing the questionnaire enclosed which will take 15 minutes of your time. Once completed, please put the questionnaire in the envelope provided, and seal the envelope before handing to the researcher. It could be appreciated if the questionnaire is completed by 02/01/2015. May you wish more information, please contact me directly through my cell phone number: (+251) 91 163 9123.

Thank you for your time and cooperation!

Tsegahun Manyazewal Musse

The Principal Investigator

Instructions:

Please indicate your responses for all questions by marking “√” in the block that you feel are the most appropriate.

Please read the numbers as follows: **Strongly agree (5), Agree (4), Neutral (3), Disagree (2), strongly disagree (1).**

Please answer the questions as honestly, frankly, and objectively as possible. The Principal Investigator knows that there are no write and wrong answers. What is of your interest is your own personal perspective.

1. Perceived service quality					
1.1. Outcome					
<i>Due to the BPR health care reform:</i>	5	4	3	2	1
1.1.1. Out patients are completing treatment services within 2 hours					
1.1.2. Emergency patients are receiving treatment services immediately					
1.1.3. Patients are getting beds within 10 minutes					
1.1.4. Patients are receiving specialized services within 72 hours					
1.1.5. Patients/Customers are receiving medical certificate with in 1 hour					
1.1.6. Patients satisfied with the hospital services					
1.1.7. The treatment and respect of patients from the hospital staff is improved					
1.1.8. Missing patients' medical records is rare					
1.1.9. Reporting systems are easy and not time consuming					
1.1.10. Guidelines and protocols in the hospital are up-to-date and appropriate					
1.1.11. Opportunities to learn from successes and challenges are created					
1.1.12. Up-to-date technologies for patient diagnosis are in use					
1.1.13. Monitoring and evaluation systems are established					
1.1.14. Staff developed a good working relationship with each other					
1.1.15. Staff receive appropriate and timely feedback about their performance					
1.1.16. Staff have a clear job description that describes their routine duties in detail					
1.1.17. Staff get a better feeling of overall job satisfaction					
1.1.18. Staff are highly motivated to their work					
1.1.19. Staff salary increases					

1.1.20. Staff promoted to a relatively higher position					
1.1.21. Staff with outstanding performance are getting recognition					
1.1.22. Staff use their working hours appropriately					
1.2. Process					
<i>In the BPR implementation process:</i>	5	4	3	2	1
1.2.1. Staff are able to clearly know the mission and vision of the hospital					
1.2.2. Supervisors were coming from health bureau to monitor the reform effort					
1.2.3. The hospital quality improvement goals were known throughout the case teams					
1.2.4. Hospital employees were involved in developing plans for improving quality					
1.2.5. Adequate training has been provided to all staff					
1.2.6. Stakeholders were communicated on the new design and feedbacks received					
1.2.7. Feedbacks from patients and data from pilot test were incorporated to the BPR					
1.2.8. The right team members have been prepared to process the reform					
1.3. Structure					
<i>Because of the implementation of BPR health care reform:</i>	5	4	3	2	1
1.3.1. The way the hospital is structured is conducive to the daily work flow					
1.3.2. The hospital becomes a better treatment facility					
2. Perceived access					
2.1. Physical dimension					
<i>After implementation of BPR health care reform, the hospital has:</i>	5	4	3	2	1
2.1.1. Defined room/spaces for each case team					
2.1.2. Enough office furniture					
2.1.3. Enough stationery materials					
2.1.4. Enough reagents/drugs/supplies to perform daily activities					
2.1.5. Clean work area					
2.1.6. Conducive staff rest room					
2.1.7. Functioning computers as needed					
2.1.8. Internet access					
2.1.9. Backup generator					
2.1.10. A functioning land line telephone to call within and outside the hospital					

2.1.11. Adequate maintenance service when a diagnostic machine fails					
2.1.12. A scheduled equipment preventive maintenance services					
2.2. Economic dimension					
<i>After implementation of BPR health care reform:</i>	5	4	3	2	1
2.2.1. Efficient and effective health care financing system has been established					
2.2.2. Financial mobilization is linked with evidence-based plan					
2.2.3. Hospital income increased					
2.2.4. Budget consumption becomes effective					
2.2.5. Corruption suspects decreased					
2.3. Temporal dimension					
<i>After implementation of BPR health care reform:</i>	5	4	3	2	1
2.3.1. Patients receive hospital services on time					
2.3.2. Patients' appointment wait-time is reasonable					
2.3.3. Patients' time spent while waiting in reception is reasonable					
2.4. Cultural dimension					
<i>After implementation of BPR health care reform:</i>	5	4	3	2	1
2.4.1. Patients receive services using languages and mode of communication suitable to them					
2.4.2. There is no patient discrimination					
2.5. Approachability dimension					
<i>After implementation of BPR health care reform:</i>	5	4	3	2	1
2.5.1. The hospital establishes a system of advocating its services to the community					
2.5.2. The community is aware of the hospital's services					
2.5.3. The community understands the value of the hospital on their health					
3. Perceived equity					
3.1. Service equity					
<i>After implementation of the BPR health care reform:</i>	5	4	3	2	1
3.1.1. Amount of money patients pay for getting hospital services is reasonable					
3.1.2. The hospital gives free services for patients who cannot afford					

3.1.3.	The hospital has appropriate infrastructure setup for disabled patients					
3.1.4.	Patients with different socio-economic, demographic, ethnic, and/or gender groups have equal access to the hospital services					
4. Perceived efficiency						
4.1. Technical, economic and allocative dimensions						
<i>In the BPR health care reform implementation process:</i>		5	4	3	2	1
4.1.1.	The best use of resources is observed					
4.1.2.	Wastage reduced and cost-effective interventions enhanced					
4.1.3.	Enough and competent health care workers and administrators are in place					
4.1.4.	Sufficient rooms are in place					
4.1.5.	Enough drugs and medical supplies, medical apparatuses and equipment					
4.1.6.	The staff have adequate knowledge on BPR objectives and principles					
4.1.7.	The staff is technically competent to implement the BPR reform					
4.1.8.	Supervisors assigned according to the BPR reform structure are capable and qualified					
4.1.9.	There is a clear channel of communication at workplace					
4.1.10.	Top management is competence to support the BPR reform					
4.1.11.	Top management involves the technical staff in decision making					
4.1.12.	Hospital management facilitates job-related training to staffs when necessary					
5. Perceived sustainability						
5.1. Service sustainability						
<i>At this time:</i>		5	4	3	2	1
5.1.1.	The hospital management is committed to maintain the BPR reform					
5.1.2.	The hospital is able to continuously improve performance					
5.1.3.	The hospital acquires the required financial resources to insure sustainability					
5.1.4.	The hospital acquires the required qualified staff to insure sustainability					
5.1.5.	The hospital networking with external partners is strengthened					
5.1.6.	The hospital has the capacity to assemble and manage resources					
5.1.7.	The hospital increases satisfaction of patients and providers with clinical or administrative services					

5.1.8. community-level partnerships are maintained									
5.1.9. new organizational practices and policies are sustained									
6. Demographics									
6.1. Age range	20-29	30-39	40-49	50-59					
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>					
6.2. Gender	Male	Female							
	<input type="checkbox"/>	<input type="checkbox"/>							
6.3. Duration of work in year as health professional	6-9	10-19	20-29	30-39					
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>					
6.4. Duration of work in year as staff in this hospital	6-9	10-19	20-29	30-39					
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>					
6.5. Profession	MD	Lab	Pharmacy	Nurse	HO	X-ray	Dentistry	Sanitary	
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6.6. Level of education	Certificate	Diploma	Degree	MSc or MPH	MD+ Speciality	PhD			
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		

Thank you for your time!

Clearance letter from the Addis Ababa City Administration Health Bureau, Ethiopia



Reference A.A.HB/2955/227
Date Feb 03/2014

- To **Gandi Memorial Hospital**
 - To **Zewditu Memorial Hospital**
 - To **Yekatit 12 Memorial Hospital**
 - To **Ras Desta Damtew Memorial Hospital**
 - To **Minilik Memorial Hospital**
- Addis Ababa, Ethiopia**

Subject: Request to access Health Facilities to conduct approved research

This letter is to support Mr. Tsegahun Manyazewal Musse to conduct research, titled "An analysis of the implementation of business process reengineering health care reform in Ethiopia". The study was duly reviewed and approved by the University of South Africa, Health Studies Higher Degrees Committee, College of Human Sciences and subsequently reviewed and approved by Addis Ababa health Bureau IRB. the Principal Investigator is informed with a copy of this letter to report any changes in the study procedures and submit an activity progress report to Ethical Committee as required. Therefore we kindly request the Hospital management and staffs to provide support to the Principal Investigator to conduct the study.



With regards,

Fite Hailu,
Secretary, Ethical Clearance Committee
Addis Ababa Health Bureau

Cor Tsegahun Manyazewal Musse
Addis Ababa, Ethiopia

Ethical Clearance Committee, Addis Ababa Health Bureau
Addis Ababa, Ethiopia

Consent for health care providers to act as a research subject

An analysis of the implementation of business process reengineering healthcare reform initiative in Ethiopia

Mr. Tsegahun Manyazewal Musse is conducting a research study to find out more about the effectiveness of the implementation of Business Process Reengineering health care reform in Ethiopia. You have been asked to participate in this study because you are staff of this hospital which is included in the study. The procedural part of this study is that the Principal Investigator explores the effectiveness of the implementation of health care reform by collecting primary data. All randomly selected staffs who fulfil the inclusion criteria will respond to the same questionnaire. It may take 15-20 minutes to complete the questionnaire.

You might not get direct benefit from participating in this study. However, it is possible that the BPR health reform you are applying may be more effectively implemented as a result of the outputs of this study.

The Principal Investigator for this study has determined and verified that responding to questionnaire for this study would typically be performed as part of the standard research method required to adequately perform studies. Neither the investigator nor you will know who is responding what. Research records will be kept confidential to the extent allowed by Ethiopian law. Your records will be kept confidential in a password protected data. The Principal Investigator can only access your data. If the study results are published or presented, you will not be identified. As participation in research is entirely voluntary, you may refuse to participate or withdraw at any step.

There are no risks from participating in this study. If you have any question about this study or if you have any concern with information leakage, you can discuss this with the principal investigator of this study, Mr. Tsegahun Manyazewal Musse.

Mr. Tsegahun has explained this study to you and answered your questions. If you have other questions or research-related problems, you may reach Mr. Tsegahun at 251- 91 163 9123.

You have received a copy of this consent document to keep. You agree voluntarily to participate in the research as described.

Respondent's signature

Witness

Date

Certificates of Biomedical responsible conduct of research

COLLABORATIVE INSTITUTIONAL TRAINING INITIATIVE (CITI) BIOMEDICAL RESPONSIBLE CONDUCT OF RESEARCH CURRICULUM COMPLETION REPORT Printed on 12/03/2013

LEARNER	Tsegahun Manyazewal (ID: 3886350)
	Meskel Flower Road
	Kirkos Sub-City
	Addis Ababa
	Ethiopia
DEPARTMENT	Research, Training and Publication
PHONE	+251 11 416 6041/83
EMAIL	tsegahunm@gmail.com
INSTITUTION	University of California, San Diego
EXPIRATION DATE	

BIOMEDICAL RESPONSIBLE CONDUCT OF RESEARCH : This course is for investigators, staff and students with an interest or focus in Biomedical Research. This course contains text, embedded case studies AND quizzes.

COURSE/STAGE:	RCR/1
PASSED ON:	12/03/2013
REFERENCE ID:	11856297

REQUIRED MODULES	DATE COMPLETED	SCORE
Introduction to the Responsible Conduct of Research	12/03/13	No Quiz
Research Misconduct (RCR-Biomed)	12/03/13	5/5 (100%)
Data Management (RCR-Biomed)	12/03/13	5/5 (100%)
Authorship (RCR-Biomed)	12/03/13	5/5 (100%)
Peer Review (RCR-Biomed)	12/03/13	8/8 (100%)
Mentoring (RCR-Interdisciplinary)	12/03/13	5/5 (100%)
Using Animal Subjects In Research (RCR-Interdisciplinary)	12/03/13	5/5 (100%)
Conflicts of Interest (RCR-Biomed)	12/03/13	6/6 (100%)
Collaborative Research (RCR-Biomed)	12/03/13	5/5 (100%)
Research Involving Human Subjects (RCR-Interdisciplinary)	12/03/13	5/5 (100%)
The CITI RCR Course Completion Page	12/03/13	No Quiz

For this Completion Report to be valid, the learner listed above must be affiliated with a CITI Program participating institution or be a paid Independent Learner. Falsified information and unauthorized use of the CITI Program course site is unethical, and may be considered research misconduct by your institution.

Paul Braunschweiger Ph.D.
Professor, University of Miami
Director Office of Research Education
CITI Program Course Coordinator

**COLLABORATIVE INSTITUTIONAL TRAINING INITIATIVE (CITI)
BIOMEDICAL RESEARCH - BASIC/REFRESHER CURRICULUM COMPLETION REPORT**

Printed on 12/03/2013

LEARNER Tsegahun Manyazewal (ID: 3886350)
Meskel Flower Road
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Addis Ababa
Ethiopia

DEPARTMENT Research, Training and Publication

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EMAIL tsegahunm@gmail.com

INSTITUTION University of California, San Diego

EXPIRATION DATE 12/02/2016

BIOMEDICAL RESEARCH - BASIC/REFRESHER : Choose this group to satisfy CITI training requirements for investigators and staff involved primarily in biomedical research with human subjects.

COURSE/STAGE: Basic Course/1
PASSED ON: 12/03/2013
REFERENCE ID: 11856295

REQUIRED MODULES	DATE COMPLETED	SCORE
Avoiding Group Harms - U.S. Research Perspectives	12/02/13	3/3 (100%)
Belmont Report and CITI Course Introduction	12/02/13	3/3 (100%)
History and Ethical Principles	12/02/13	6/6 (100%)
Basic Institutional Review Board (IRB) Regulations and Review Process	12/02/13	5/5 (100%)
Informed Consent	12/02/13	4/4 (100%)
Social and Behavioral Research (SBR) for Biomedical Researchers	12/02/13	4/4 (100%)
Records-Based Research	12/02/13	2/2 (100%)
Genetic Research in Human Populations	12/02/13	2/2 (100%)
Research With Protected Populations - Vulnerable Subjects: An Overview	12/02/13	4/4 (100%)
Vulnerable Subjects - Research Involving Prisoners	12/02/13	4/4 (100%)
Vulnerable Subjects - Research Involving Children	12/02/13	3/3 (100%)
Vulnerable Subjects - Research Involving Pregnant Women, Human Fetuses, and Neonates	12/02/13	3/3 (100%)
FDA-Regulated Research	12/02/13	5/5 (100%)
Research and HIPAA Privacy Protections	12/03/13	5/5 (100%)
Conflicts of Interest in Research Involving Human Subjects	12/03/13	5/5 (100%)
University of California, San Diego	12/03/13	No Quiz

For this Completion Report to be valid, the learner listed above must be affiliated with a CITI Program participating institution or be a paid Independent Learner. Falsified information and unauthorized use of the CITI Program course site is unethical, and may be considered research misconduct by your institution.

Paul Braunschweiger Ph.D.
Professor, University of Miami
Director Office of Research Education
CITI Program Course Coordinator

Consent for panel experts to act as a research subject

An analysis of the implementation of business process reengineering health care reform initiative in Ethiopia

Dear Colleagues,

Thank you for devoting your time to complete this questionnaire. I, Tsegahun Manyazewal Musse, am currently studying for Doctor of Literature and Philosophy in Health Studies at the University of South Africa College of Human Sciences, and I am expected to conduct a research as required for fulfilment. This questionnaire is part of the doctoral research project, being conducted as a Delphi study in two rounds. Its main purpose is to identify strategic priorities and key interventions likely to have significant impact on future health care systems in Ethiopia. The survey will have two rounds of questions. The questionnaire for the first round is attached. It is relatively short with only seven rows of responses needed, which may take about 10 minutes to complete.

You were recommended for participation as a member of the Ethiopian senior health policy experts with the knowledge and insight needed to provide the ideas required for this study. The study involves participants from government health bureaus, development partners, academics, non-governmental organizations, Health care administrators, and health professional associations. You might not get direct benefit from participating in the study. However, it is possible that the health care performance of public hospitals in Ethiopia may be more effective as a result of the outputs of this study.

The Delphi procedure treats all responses anonymously and uses interactions based on prior input to provide a focus for the results and to reach consensus. Neither the investigator nor you will know who is responding what. Research records will be kept confidential to the extent allowed by Ethiopian law. Your records will be kept confidential in a password protected data. The Principal Investigator can only access your data. If the study results are published or presented, you will not be identified. As participation in research is entirely voluntary, you may refuse to participate or withdraw at any step. If you have any question about this study or if you have any concern with information leakage, you can discuss this with the principal investigator of this study, Mr. Tsegahun Manyazewal Musse.

Mr. Tsegahun has explained this study to you and answered your questions. If you have other questions or research-related problems, you may reach Mr. Tsegahun at 251- 91 163 9123.

You have received a copy of this consent document to keep. You agree voluntarily to participate in the research as described.

Respondent's signature

Witness

Date

Study phase II Delphi questionnaire, round one

Instructions:

In this questionnaire you will find a set of seven strategic priorities that the principal investigator developed based on findings of the first phase of the study. The strategic priorities are likely to strengthen implementation of the BPR health care reform in Ethiopia.

The strategy statements are not ordered by priority of importance. In section A, you are kindly asked to sequence the strategic priorities into 1 to 7 based on their likely to have significant impact on future health care systems in Ethiopia.

In section B, you are kindly requested to consider how likely it is that certain changes will occur in the years 2016-2020 due to each strategic priority. Please indicate your responses for section B by marking “√” in the block that you feel are the most appropriate.

Please answer the questions as honestly, frankly, and objectively as possible, and return the completed questionnaire within three days of receipt so that it can be analysed and incorporated in round 2.

Strategic priorities	Section A	Section B	
	Rank based on priorities (1-7)	Probability of change until 2020	
		Likely	Unlikely
Reinforce patient-centred quality of care services			
Trigger health system audits			
Efficient use of hospital financing			
Foster a healthy and respectful workforce environment			
Initiate new health care reform			
Maximize innovations and the use of health technologies			
Ensure efficient and accountable leadership and governance			

Thank you again for your time!

Study phase II Delphi questionnaire, round two

An analysis of the implementation of business process reengineering health care reform initiative in Ethiopia

Dear Colleagues,

This questionnaire is part of a doctoral research project, being conducted as a Delphi study in two rounds (with feedback to participants after each round). You have already completed the first round; this is the second (final) round. I, the principal investigator of the study, want to thank you in advance for your contributions for the second round of this study.

Following analysis of round 1 result, I found out that consensus has not been reached on the rank between two strategic priorities, namely “Initiate new health care reform” and “Trigger health system audits”. The two strategic priorities scored similar 6th strategic priority rank.

Thus, in the table below, you are kindly asked to sequence the strategic priorities into 1 to 2 based on their likely to have significant impact on future health care systems in Ethiopia.

Please answer the questions as honestly, frankly, and objectively as possible, and return the completed questionnaire within three days of receipt.

Strategic priorities	Rank based on priorities (1-2)
Trigger health system audits	
Initiate new health care reform	

Thank you again for your time!