

American University in Cairo

AUC Knowledge Fountain

Theses and Dissertations

6-1-2019

Physicians' motivation in the Ministry of Health and Population - Egypt: challenges and opportunities.

Heba AlSawahli

Follow this and additional works at: <https://fount.aucegypt.edu/etds>

Recommended Citation

APA Citation

AlSawahli, H. (2019). *Physicians' motivation in the Ministry of Health and Population - Egypt: challenges and opportunities*. [Master's thesis, the American University in Cairo]. AUC Knowledge Fountain.

<https://fount.aucegypt.edu/etds/761>

MLA Citation

AlSawahli, Heba. *Physicians' motivation in the Ministry of Health and Population - Egypt: challenges and opportunities*. 2019. American University in Cairo, Master's thesis. *AUC Knowledge Fountain*.

<https://fount.aucegypt.edu/etds/761>

This Thesis is brought to you for free and open access by AUC Knowledge Fountain. It has been accepted for inclusion in Theses and Dissertations by an authorized administrator of AUC Knowledge Fountain. For more information, please contact mark.muehlhaeusler@aucegypt.edu.

The American University in Cairo

School of Global Affairs and Public Policy

**PHYSICIANS' MOTIVATION IN THE MINISTRY OF HEALTH AND POPULATION-
EGYPT: CHALLENGES AND OPPORTUNITIES**

A Thesis Submitted to the

Public Policy and Administration Department

In partial fulfillment of the requirements for the degree of

Master of public policy

By

Heba ALSawahli

Supervised by

Prof.Laila ElBaradei

Spring 19

CONTENTS

List of tables.....	5
List of figures.....	6
List of abbreviations	7
Acknowledgment	8
1 Chapter one: Introductory discussions.....	10
1.1 Introduction.....	10
1.2 Problem statement.....	11
1.3 Policy relevance:.....	20
1.4 Research objectives and questions:.....	20
2 Chapter Three: Literature Review:	22
2.1 Motivation of HRH and why it is relevant to health reform	23
2.2 Definition of motivation.....	24
2.3 Intersection with other definitions:	25
2.4 Theories of motivation.....	25
2.5 Determinants of motivation	28
2.6 Consequences of demotivation	34
2.7 International approaches to address health workforce motivation and consequent shortages	36
3 Chapter Two: Methodology and Conceptual Framework.....	43
3.1 Conceptual framework.....	43

3.2	Methodology	44
3.3	Ethical considerations	48
3.4	Limitations	48
3.5	Research motivation/ role of researcher.....	49
4	Chapter Four: Egypt Health Care System.....	50
4.1	Egypt health system: physicians, supply, and attempts to reform	50
4.2	Work environment for physicians.....	51
4.3	Role of private sector for physicians and patients	52
4.4	Physicians in the reform plans	53
4.5	Medical Education and preparedness to market needs	55
4.6	Role of medical Syndicate:	57
4.7	Motivation of Egyptian medical doctors.....	57
4.8	Response to the problem.....	60
4.9	Migration of Egyptian doctors	62
5	Chapter Five: Study results	64
5.1	ANALYSIS OF FINDINGS	64
5.1.1	<i>Individual factors of motivation</i>	64
5.1.2	<i>Organizational factors</i>	66
5.1.3	<i>Cultural factors</i>	75
5.1.4	<i>Response to the problem</i>	78

5.1.5	<i>Consequences of demotivation and dis-satisfaction</i>	79
5.1.6	<i>Medical syndicate perspective</i>	84
5.2	Conclusion	86
5.3	Discussion	88
6	Chapter Six: Policy conclusions and Implications	90
6.1	Addressing demand	91
6.1.1	<i>Medical education</i>	91
6.1.2	<i>Medical training</i>	91
6.2	Addressing supply	92
6.2.1	<i>Performance-based health finance</i>	92
6.2.2	<i>Technology and telehealth</i>	93
6.2.3	<i>Introducing assistant cadres and mid-level personnel</i>	93
6.2.4	<i>Public-private partnerships</i>	94
6.3	Addressing retention	95
6.3.1	<i>Government expenditure on health</i>	95
6.3.2	<i>Steering instead of rowing</i>	96
6.3.3	<i>Sound legislations and objective standards</i>	97
6.3.4	<i>Investment in primary healthcare</i>	97
7	References	99

LIST OF TABLES

Table 1 Physician, nurses and midwifery personnel density per 1000 population in Egypt and other middle-income countries in the region.	13
Table 2 List of participants with their respective jobs and data collection tool	47
Table 3 Healthcare facilities affiliated to MOHP	50
Table 4 Percent staff registered in syndicates vs staff registered in MOHP.....	52
Table 5 Egypt Compared with Other Middle-Income Countries in the Region in 2008/2009.....	54

LIST OF FIGURES

Figure 1 Physician population density in Egypt, in comparison to the world.....	12
Figure 2 How strong health system adds to commitment to SDGs.	19
Figure 3 Conceptual framework for HRH motivation	44
Figure 4 HRH motivation factors according to Maslow hierarchy of needs	26
Figure 5 General conceptual framework on the effects of PBF on HRH	37
<i>Figure 6 Government health coverage and out-of-pocket payments in selected African countries, 2011</i> .	55
Figure 7 Different spheres for setting policies for HRH.....	88
Figure 8 Trilemma of "physicians in public sector"	87
Figure 9 Policy implications for Physicians in public sector.....	90

LIST OF ABBREVIATIONS

CAOA	Central Agency for Organization and Administration
DPT	Diphtheria, Pertussis and Tetanus
EMR	Eastern Mediterranean Region
EMS	Egyptian Medical syndicate
FM	Family Medicine
HIO	Health Insurance Organization
HMIS	Health Management Information System
HPSR	Health Policy and Systems Research
HRH	Human Resource for Health
ILO	International Labor Organization
LMIC	Low-Middle income
MOHE	Ministry of Higher Education
MOHP	Ministry of Health and Population
OECD	Organization for Economic Co-operation and Development
OOP	Out Of Pocket
PBF	Performance based financing
PHC	Primary Healthcare
PHU	Primary Health Unit
SDGs	Sustainable development Goals
SHC	Secondary Healthcare
USAID	United States Agency for International Development
WHO	World Health Organization

ACKNOWLEDGMENT

To my partner in the nights of submission, revisions for final exams and even editing this research paper. To my close company since the start of this degree, my daughter, Nelly. I find it complicated to tell you how grateful I am for your eternal love energy. I owe you much time that I deducted to commit to my studies and career. I would not have done it without your understanding and my loving mother support. I believe we have earned this degree together. I take this chance to show my endless gratitude to your trust, my mother and father. You always were a model for easement and backing. And to my forever encouraging and believing husband, Ibrahim, who always pushes me to advance and excel.

I would like to extend my sincere gratitude to the thorough mentorship that my supervisor Dr. Laila ElBaradei provided. She has always been a source of encouragement and insightful advice. Thank you for your patience during writing this piece! Not to forget the exceptional constructive feedback from Dr.Hamid Ali and Dr.Shahjahan Bhuiyan, my respectful readers.

A special mention to my lifetime friend Norhan Bader for her endless support. I also would like to thank my colleagues, Sherif Mostafa and Mohammad Shalaby. Your constructive thoughts and genuine help were indispensable for me.

The American University in Cairo

School of Global Affairs and Public Policy

Department of Public Policy and Administration

**PHYSICIANS' MOTIVATION IN THE MINISTRY OF HEALTH AND POPULATION-
EGYPT: "CHALLENGES AND OPPORTUNITIES"**

Heba AlSawahli

Supervised by Prof. Laila El Baradei

ABSTRACT

Amidst the different problems encountered at the Egyptian Ministry of Health (MOHP) and Population, the issue of physicians' retention is on the rise. The Egyptian public health system reportedly lost more than five percent of its workforce of physicians in less than three years (2016-2018), as documented by CAPMAS and the Egyptian Medical Syndicate in 2016. Clinicians are not only skipping the practice from the MOHP, but even a number of academic institutions report a decreasing number of candidates interested in pursuing such a previously known attractive career path as faculty in the different schools of medicine. Figures about the increased migration rates of Egyptian doctors are also striking, partly attributable to the various hurdles they face within the MOHP.

Adopting a qualitative research approach, the motives of clinicians to practice in the public sector are investigated in this study. Theories and definitions of motivation are explored to explain how motivation starts and what is required to maintain it. The research showed that various factors push and pull Egyptian doctors from practice in the MOHP; their individual motivations highly change due to organizational and cultural conditions. Reported constraints included the challenging career development opportunities, the inadequate infrastructure, as well as inefficient management, and inadequate legislative environment. Doctors' attrition, shifting to private practice and migration to the Arab and Gulf countries are some commonly encountered consequences of low motivation.

Physicians' shortage is an issue in both developing and developed countries. Securing the needed human resources for the health care services is vital. Several policies were developed to bridge this gap, including performance-based financing and training complementary personnel. In Egypt, some measures were adopted such as obliging fresh graduates to fill in the gaps and piloting the delegation of certain tasks to mid-level personnel. However, as the current study indicates, additional expenditure on health is the real step that the Egyptian health system should implement to ensure healthier living conditions for the most underprivileged citizens. Reforms in governance and administration should follow, with changes to medical education and training entities.

1 CHAPTER ONE: INTRODUCTORY DISCUSSIONS

1.1 INTRODUCTION

Egypt healthcare system has significant constraints on different levels: financial, infrastructure, service delivery, system structure and human resources. These constraints are age old issues. Over the years, different reform strategies were introduced, and the Ministry of Health and Population (MOHP) conducted a situation analysis in cooperation with the World Health Organization (WHO) and several international aid agencies. However, the results of these strategies in terms of improved performance are yet to yield any positive change in the context of human resource management. As a result, there have been a series of challenges met by physicians as regards their work conditions and environment. A number of violent incidents took place against clinicians by unsatisfied patients in emergency rooms (EMS, 2017).

Human resources are the basic tool for providing quality healthcare services. The potential of medical doctors to cover the Egyptian community healthcare needs relies on effective human resource management. However, in the realm of the noted constraints, and the presence of other appealing alternatives for them, the issue of retaining physicians within the MOHP system is becoming a big challenge. Through reviewing the literature and conducting qualitative filed study, this research investigates motivation determinants of physicians to continue practice in the public sector and what other options they pursue. In addition, the study analyses how the physicians' retention problem may be reflected on the quality of health services in Egypt, and tries to come up with sound policies that could provide mutual benefits for both the provider and the beneficiaries.

1.2 PROBLEM STATEMENT

General outline of the organizational struggles

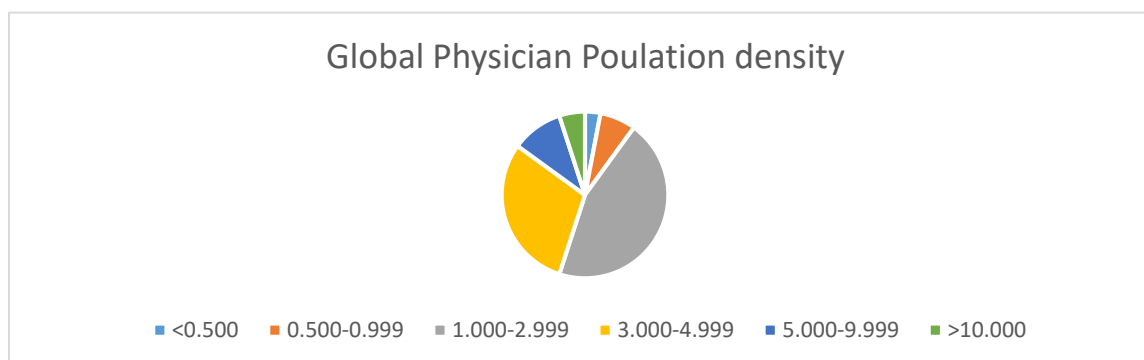
Based on the WHO health system profile of Egypt, the MOHP lacks a human resource plan. No defined job description used for employees in the recruitment, monitoring or evaluation phases. The employment conditions in the MOHP follows those set by the Central Agency for Organization and Administration (CAOA). The performance levels are barely reflected through the unified evaluation for all workers regardless of their job. Moreover, performance does not relate to promotion or further career enhancement. Adding to that, the lack of career development opportunities and the deficient incentive system, these factors render the employees unmotivated to perform well or to retain job. Accordingly, there is discrepancy in the number and distribution of medical doctors either geographically or within specialties (WHO, 2006). This shortage is further aggravated by the misleading figures about the numbers of physicians working in the Ministry Of Health and Population. Based on the medical syndicate records in 2010, only 38% of clinicians were registered in the MOHP, including those who work in public and private sector simultaneously, as well as physicians taking leave without pay (EMRO, 2011). The MOHP has identified the fragmentation of Human Resource for Health (HRH) information management and absence of staffing figures for facilities other than the MOHP or private health providers as major hindrance for reliable estimations about HRH (WHO, 2013). Furthermore, the disproportionate composition of the health teams due to lack of qualified nurses and paramedical staff burdens the clinicians (WHO, 2006). Unsatisfactory pay, gloomy work environment, and challenging career advancement opportunities are contributing elements to Egyptian physicians' attrition. With the presence of other appealing solutions for them, quitting the public sector is becoming a trend that creates a genuine concern about the coverage of public health services. In three years (from 2016

to 2018), the Ministry of Health and Population lost more than five thousands medical doctors, about five percent of its workforce through resignations (CAPMAS, 2016). Moreover, academic institutions that used to be attractive opportunities for clinicians are being skipped, as evident in the last call for residency in AinShams University (Doctor News web, 2018). Physicians chase their passion and find better opportunities through shifting to private practice or migration to countries that appreciate them financially and socially.

Numerical facts

According to the literature, Egypt is often referred to as a country with an excess number of physicians, especially when comparing it with other countries in EMR (El-Saharty, 2004, Zhang, 2015, Oxford Business Group, 2016). However, when looking at figure 1, it is clear that the physician population ratio in Egypt (shown in orange category) cannot be described as an excess.

Figure 1 Physician population density in Egypt, in comparison to the world



Source: Global Health Observatory data repository, 2018.

<http://apps.who.int/gho/data/node.main.A1444>

In 1999, there were 10.8 physicians per 10,000 citizens (Gaumer, et al., 1999). In 2014, there were 8.14 physicians per 10,000 citizens, although medical graduates were 11.1 per 10000 citizens (WHO, 2017). A threshold of 2.3 health workers per 1000 (physicians, nurses and

midwives only) is required for the health system to deliver primary healthcare. In Egypt, physicians, nurses and midwives are 2.2 per 1000 (WHO, 2018). These numbers are significantly less than other neighboring low-middle income countries, as in table 1.

Table 1 Physician, nurses and midwifery personnel density per 1000 population in Egypt and other middle-income countries in the region.

Country	Year	Physicians density (per 1000 population)	Nursing and midwifery personnel density (per 1000 population)
Djibouti	2014	0.229	0.557
Egypt	2014	0.814	1.434
Jordan	2014	2.65	4.094
Lebanon	2014	2.38	2.562
Libya	2014	2.092	6.905
Morocco	2014	0.618	0.872
Syrian Arab Republic	2014	1.546	2.302
Tunisia	2014	1.269	2.444

Source: Global Health Observatory data repository, 2018.

<http://apps.who.int/gho/data/node.main.A1444>

The coverage of 10,000 individuals with primary health facilities is 0.6, and with hospital beds is 14.3. Through these tools, Egypt health system covers 82.9% of the demand for family planning, 91.5% of skilled birth attendance, 94% of DPT vaccination for children under 1 year, 93% of measles immunization (WHO, 2017). However, these figures do not really respond to the Egyptian health needs (WHO, 2005). There is severe imbalance in the distribution of the number of available physicians either within specialties or geographically (WHO, 2006). This is due to the flaws in the management of the health system. The situation continues to worsen especially with the unlimited acceptance and the increasing numbers of students enrolling in medical schools. Adding to this, the challenge of improving the skills of physicians and paramedical team, and the shortage of supplies, makes the situation even worse for practice in MOHP facilities.

Filling the gap, the wrong way

In the context of the above mentioned numbers, and considering the fact that Egyptian medical graduates have low interest to choose family medicine as a specialty that is essential to provide primary care (AlKot, et al, 2015), the MOHP needs to act to fill this gap in primary healthcare delivery. Fresh graduates are obliged to work in primary health care units for one year at least before choosing a medical or surgical specialty at secondary and tertiary care centers, based on their later announced needs. Usually the conditions of employment are unsatisfactory to the extent that there usually is an annual strike by fresh graduates, and this is likely to continue until the Ministry provides some compromises in the distribution and needs scales (EMS, 2017).

Another important aspect of the problem is low wages. Since the early 2000s, doctors have been forming different advocacy groups and protesting about their wages. Egypt lies in the same category with Sudan and Myanmar where health-sector wages are only 1 per cent above the poverty line of two USD a day (ILO, 2014/2015). There were many calls to strike to raise the issue of their low pay. The most successful strike happened in 2011, at a time when their monthly salaries finally reached one thousand EGP (around 175 USD, exchange rate 5.7 in 2011) (Ali, 2014). A bundle of strategies to enhance the salaries of doctors followed, and the salaries were doubled nominally, but in reality less in value. Monthly pay reached two thousand EGP (around 112 USD, exchange rate 17.9 in 2018) currently. Until this moment, there is a political dilemma about granting a decent infection allowance (one thousand EGP) instead of the current nineteen Egyptian pounds (around one USD, exchange rate 17.9 in 2018) to doctors. This is happening in spite of the presence of adjudication and reported infections that led to death of at least six doctors over the past three years and dozens of doctors left with lifelong diseases (Mada Masr, 2018, Daily news Egypt, 2018).

Over the past five years (2013-2018), many violence incidents were reported against doctors and health teams either in emergency rooms or in hospital departments. One recent act at Matareya teaching hospital reached out to court following the attack of police staff against the emergency doctors who refused to issue a falsified medical report about their condition. There was a prison sentence and compensation against the accused (EMS, 2017). The same hospital witnessed the death of a resident doctor due to claimed inappropriate infrastructure and conditions at the doctors' dormitory (Daily news Egypt, 2018). Despite being one of the big hospitals in the Egyptian capital that patients recognize as offering quality service, and residents consider as a good opportunity to practice and learn, such incident raises questions about other less advantaged facilities. The political aspect in dealing with such incidents from the side of the MOHP and public opinion influencers are part of the sociocultural challenges and managerial deficits physicians face.

This mixture of improper utilization of the number of physicians available within the MOHP, the lack of career development tools and low pay emphasizes the importance of changing the approach of human resource management inside the ministry. This also opens the door to nongovernmental and civil society organizations to play a role towards bridging this gap.

Mandates without tools

The health of the Egyptian people is the responsibility of the MOHP. However, this mandate is questionable. This is evident through the insufficient allocated share in the national budget. The Egyptian constitution is clear about the minimum budget share to be allocated to the health sector, as stated in article 18:

“The state commits to allocate a percentage of government expenditure that is no less than 3% of Gross Domestic Product (GDP) to health. The percentage will gradually increase to reach global rates.”

Article 238:

“The state shall gradually implement its commitment to the allocation of the minimum government expenditure rates on education, higher education, health and scientific research that are stipulated in this Constitution as of the date that it comes into effect. It shall be fully committed to it in the state budget of the fiscal year 2016/2017.”

Throughout the past three years (2016 – 2018), the governmental expenditure was far less than 3% and even reached 1.5% in 2018, despite the increase of total amount spent, with almost half of it directed to wages. To bridge this constitutional violation, the government decided to consider the allocations for infrastructure related to health facilities within the health budget (ElSaadany, 2017, Egypt Citizen budget 2014/2015).

Recognition by law but not procedures

Article 18 in the Egyptian constitution declares that:

“The state commits to improving the conditions of physicians, nursing staff, and health sector workers, and achieving equity for them.”

There are great imbalances when it comes to staffing in MOHP. While the number of physicians is sufficient initially, there is a definite shortage in well-qualified midwives, and graduate nurses. This requires the physicians to perform duties that are more appropriate for the

paramedical staff to do. This is a major dissatisfying factor for clinicians especially at the primary level.

The geographic distribution of physicians is another challenge. Though reforms have made on making the rural and frontier health units more appealing to fresh graduates, there is still a considerable gap between services in rural and urban areas at the primary and secondary levels. This distribution of human resources contrasts with the pattern of health status. It is the areas with the poorest health status, which have the lowest health personnel to population ratios (EMRO, 2011).

Medical records are another challenge for health facilities in Egypt. There is lack of enforcement of the system, leaving rooms for multiplicity and errors, with lack of monitoring and supervision. It is then difficult to deliver quality care or to maintain it, due to absent standardization of procedures. There are serious problems with over-prescribing and over-utilization of unnecessary services in MOHP and Health insurance Organization (HIO) establishments, highlighting the essential need for control on drug prescription and medical consultation procedures (WHO, 2006).

Continuing education for all categories of health workers continues to be fragmented and uncoordinated. Continuing education remains an individual choice among practitioners rather than a requirement (WHO, 2013). This has significant implications on improving the knowledge and skills of the health workforce in the country. The MOHP has a limited capacity to implement its policies. For example, MOHP does not contribute to the curriculum of medical schools or regulate the number of medical students (WHO, 2006). The MOHP has many general directorates that are not coordinated with each other (EMRO, 2011). Local health authorities can neither make autonomous decisions nor have the capacity to implement their own plans. The private sector lacks

effective regulation as well. Though being a major player in service provision, it is rarely engaged in setting health plans, for either health service providers or private universities (WHO, 2014). Thus, there is no common goal for all stakeholders in health field.

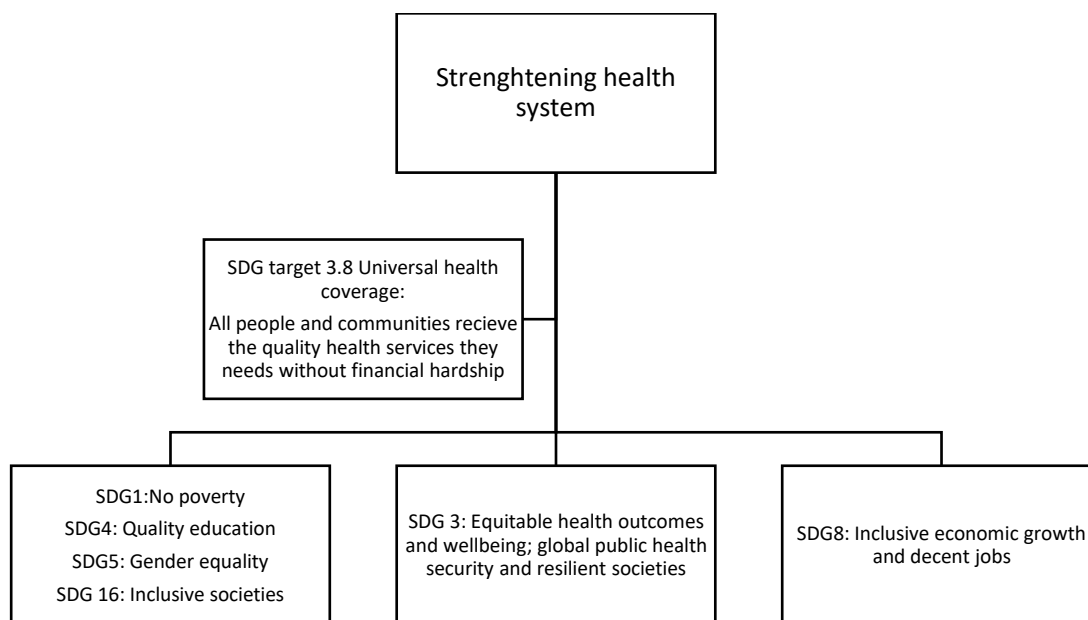
How health workforce affects commitment to SDGs

The World Health Organization (2006) determined a numerical threshold for the health worker density of 2.3 skilled health workers (physicians, nurses and midwives) per 1000 population, as a necessity to achieve 80% of the skilled birth attendance. This threshold is limited in application on other SDGs because it covered that one task. Other goals entail more comprehensive services for mother and child health, and for noncommunicable diseases. The World Social Security Report 2010/2011 identified a minimum of 3.4 skilled health workers for 1000 population, which was updated to 4.1 per 1000 later in 2014 by the International Labor Organization (ILO). This ratio relates more to countries where social protection systems are still underdeveloped. Other thresholds exist for specific objectives. For instance, to end preventable maternal death, there should be 5.9 skilled health professionals per 1000 population (ILO, 2014). In that sense, the WHO (2016) identifies African, South-East Asia and Eastern Mediterranean regions to be the most concerned regions with physician shortage. The health labor market is moving towards increased disproportion between needs, supply and demand of health services in these regions. Most of the growth in supply is happening in upper middle-income and high-income nations, with simultaneous projections in deficits in low middle and low-income countries (WHO, 2016). Moreover, this growth will outweigh the need in some high and middle-income countries (Global Health Workforce Alliance, 2014). Putting this into consideration, along with the discrepancy in wages with low-income countries, more health workforce mobility will happen, based on the current documented trend by the Organization for Economic Co-operation and

Development (OECD), 2015. Less fortunate countries should adopt public measures with help of the international community to correct this market failure. Coherent policies for education, health, finance and labor are the key to compensate for gaps in number, quality and distribution of health workforce to be able to meet the sustainable development goals. Furthermore, the global health workforce alliance (2014) puts working on health workforce distribution, accessibility, performance and productivity in the same priority as enhancing their availability, especially on the primary health care level. In addition, over-restrictive focus on shortage as number can drive less efficient policies.

As shown in figure 2, the case of investment in health is totally for the benefit of these low-income countries, as it contributes to the achievement of various sustainable development goals. The economic return on investing in health was estimated to be 24 percent of economic growth between 2000 and 2011 (The Lancet Commission, 2013).

Figure 2 How strong health system adds to commitment to SDGs.



Source: *Bulletin of the World Health Organization* 2017;95:537-539. doi: <http://dx.doi.org/10.2471/BLT.16.187476>

1.3 POLICY RELEVANCE:

Looking at Egypt's national strategic vision 2030, and MOHP plan, there is clear omission of the role of the health workforce. The priority issues include the health insurance plan, coverage of services and indicators for performance. However, there is no focus on who will implement these plans. There are many challenges encountered by the health workforce in Egypt, especially among physicians, especially at the primary level. Financial incentives are commonly thought of as the most efficient intervention that can motivate medical doctors to perform. There may be a need for rethinking pay and linking to performance. However, intrinsic components of motivation including organizational management, career opportunities and training remain underestimated. This research aims to contribute towards strengthening the evidence base on determinants of motivation and job satisfaction among medical doctors in the Egyptian Ministry of Health and Population.

1.4 RESEARCH OBJECTIVES AND QUESTIONS:

What are the factors that determine the motivation of medical doctors to practice within the Egyptian MOHP? What are the policy alternatives to enhance their potential to work in public health sector?

The objective of this research is to present innovative health policy and systems research (HPSR) carried out to understand motivation of medical doctors at the primary health level. It presents descriptive methods to understand and apply different theoretical and methodological models to measure motivation. It investigates the role of organizational, social factors as well as financial incentives to promote the choice of practice in public settings as well as physician

retention. Finally, it provides policy recommendations based on other low and middle-income countries experiences and correlations with the findings of the research.

2 CHAPTER THREE: LITERATURE REVIEW:

Health care reform plans usually provide solutions about restructuring the institutions, better insurance coverage and enhancing health indicators. However, the primary tool for implementing such reforms – human resources for health- are rarely addressed. This literature review covers wide range of papers, books, Egyptian government reports and publications of international development organizations mostly from the year 2000 until the present time. It also digs in important theories of motivation and job satisfaction that were developed throughout the seventies of the past century.

The first section of the literature review sheds light on the relevance of the motivation healthcare workers to enhancing the health system. The term “motivation” itself has different definitions, theories and intersection with other concepts, covered in the second and third parts of the literature review. Here is a presentation of various theories aimed at analysis of motivation, in the fourth section. Understanding the factors that makes HRH committed to their mission helps in designing logical tunings to the system to guarantee and enhance the motivation of workers. One useful summarized understanding of these different investigations can be that as an individual, the sociodemographic aspects and experiences draw his/her personal values and ambitions(Franco, et al, 2002). These can be interpreted as internal constituents of motivation, while the external components that alter the motivation is when reality meets the expectations, as presented in the fifth part. Despite the fact that human behavior is very complex, there can be anticipatory measures about basic elements of internal and external determinants of motivation that guide planning for human resources. Accordingly, when the whole picture is not satisfactory for the healthcare workers, there are group of common alternatives they usually pursue. They are listed under the

heading, consequences of demotivation. The last section gives information about the similar international experiences in areas of doctors' shortage, shifting to private practice, and brain drain.

2.1 MOTIVATION OF HRH AND WHY IT IS RELEVANT TO HEALTH REFORM

The human factor in healthcare is pivotal because the service relies a lot on labor whose motivation is reflected on quality and other aspects like equity and efficiency (Bennett & Franco, 1999). It is not just about procurement of equipment and technical input of the healthcare worker. It is rather about what makes him/her regular at work, with willingness to be efficient. This willingness is part of the motivation that results from interaction between workers, work conditions and settings, and the management system (Hornby & Sidney, 1988). In this sense, motivation is both a driver and a consequence of the job of the health worker performance (Bhatnagar, 2014; Borkowski, 2009).

Interestingly, Martineau and Martinez (1996) describe the relationship between human resources and the health sector as a symbiotic relationship. Reforms in human resource management enhances the health sector performance. And from the other side, reforms in health sector empower human resource management. Education, training, restructuring salary scales, linking performance and reward, and feedback are among the efficient components of health sector reform that improve health worker motivation (Chandler, et al, 2009; Bhatnagar A ,2014; Bhatnagar & George, 2016).

Despite the above-illustrated relevance to health sector reform, worker motivation has seldom been an objective of renovations, especially in developing and low-income countries (Bennett & Franco, 1999).

2.2 DEFINITION OF MOTIVATION

There are various definitions of motivation in the literature. Basically, it is “*the individual’s degree of willingness to exert and maintain an effort towards organizational goals*” (Franco et al. 2002). It reflects the interaction between the worker, organizational context and societal factors. Though being an internal psychological process, people cannot be motivated directly on their own. Considering the context is essential through understanding determinants of motivation. These determinants are the way how motivation is assessed, as it is not observable by its nature.

Motivation is also defined as “*a psychological process aimed at achieving both personal and organizational goals, developed among workers due to a combination of their personal needs and desires, the organizational context within which they work, and the community of which they are a part*” (Bhatnagar, 2014). Different fields had discourses about motivation, including psychology, organizational behavior and economics, particularly in high-income countries. In this essence, it has two types of leading theories that overlap in their analysis; content and process theories.

Borkowski (2009) and Burns et al. (2012) provide evidences from the health sector to support their insights. Content theories of motivation conclude that the desire to comply with one’s own needs and values drive the motivation of workers. On the other hand, process theories of motivation focus more on the cognitive processes that build the cycle of initiation, direction, maintenance and modification to motivation and associated behavior. It focuses more on the interactions and work environment (Burns et al., 2012).

2.3 INTERSECTION WITH OTHER DEFINITIONS:

Owing to its complexity, the concept of motivation converges with concepts of job satisfaction and retention. Job satisfaction is referred to as “*a pleasurable or positive emotional state resulting from the appraisal of one’s job or job experience*” (Locke, 1976). Being interconnected and even complementary to each other, some authors alternate between them. However, each of them is a separate entity (Cummings and Bigelow, 1976). Motivation is more associated with the individual’s drive to meet the goals of the organization. On the other hand, job satisfaction reflects the attitude or the psychological status towards the settings of the organization. The two concepts are yet crucial for human resource management and are affected by same influences of people, management and culture (Dolea and Adams, 2005; Franco et al., 2002). It makes perfect sense that motivated workers are expected to practice their job for longer times and in an enhanced manner.

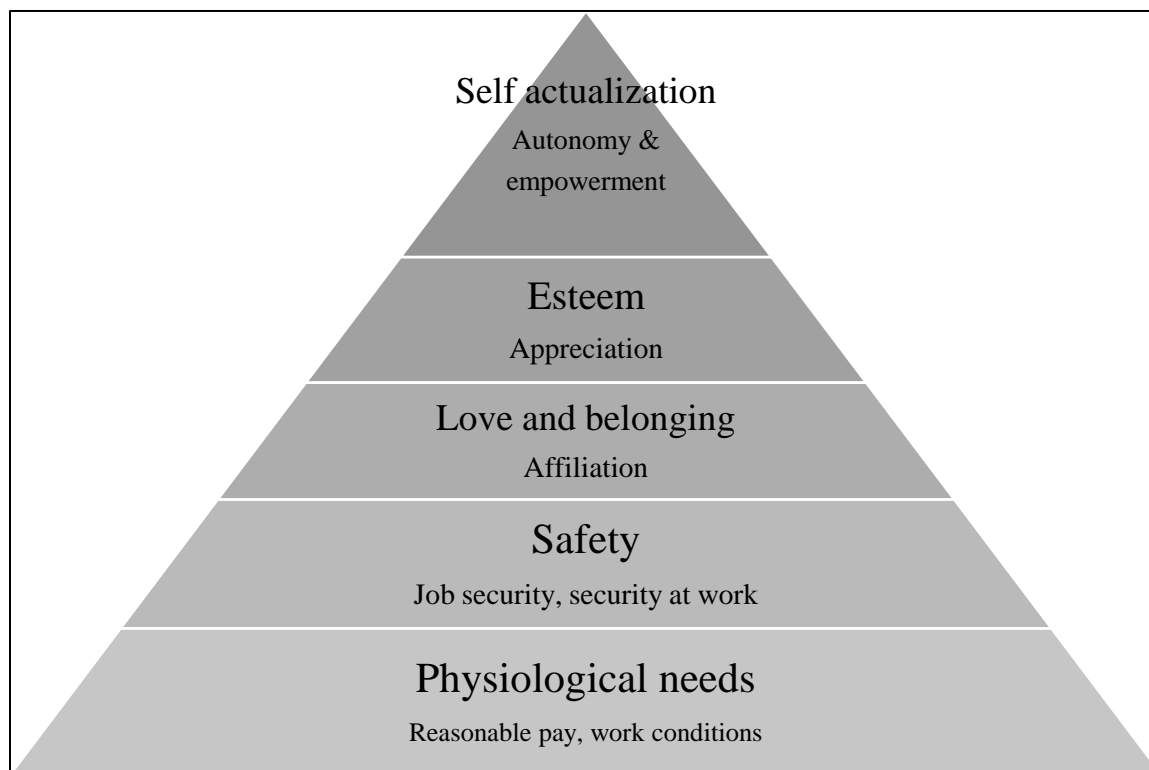
2.4 THEORIES OF MOTIVATION

There are two main theories that analyze motivation as content and process. The content theory relies on the personal values and needs that drive people to fulfill (Locke, 1976). The process theory focuses on the emotional and psychological aspect that start, direct, maintain and modulate human behavior towards work (Franco, et al, 2000). The latter approach is thought to overcome the limitations of the former prospective that does not answer the privilege of motivating factors over others (Shortell & Kaluzny, 2006). This is mainly attributed to the interactions and the context of work practices that is much more considered in the process theory.

Maslow’s Hierarchy of Needs is an example of a content theory, which defines five needs humans aspire to fulfill in a certain order. Psychological needs including reasonable pay and

working conditions, security of the job and at work, affiliation that includes work environment, esteem resulting from appreciation, reaching up to self-actualization that gives autonomy and empowerment (Maslow, 1954). Latham and Ernest (2006) showed that workers with low skills are satisfied with the lower needs, while high skill jobs relate more to the upper three.

Figure 3 HRH motivation factors according to Maslow hierarchy of needs



Source: Maslow, A. H., Frager, R., Fadiman, J., McReynolds, C., & Cox, R. (1970).

On the other hand, Herzberg (1959) established a theory that relies on two major components; hygiene factors and satisfiers. While the absence of hygiene factors leads to job dissatisfaction, their presence does not motivate or create job satisfaction. These factors include organizational policies, communication, work environment and wages. In contrast, satisfiers were the elements that generate motivation and sustain it. Achievement, recognition, nature of work, responsibility, and advancement are the motivators (satisfiers) defined by Herzberg (1959). Moreover, such elements are of long-term value for motivation and job satisfaction rather than hygiene factors that

relate to short-term behavior reflected on performance. Accordingly, satisfiers are about the person's perception about the type of job from the technical point of view. While hygiene factors (dissatisfies) are more into what is around the job as regards the work environment or how the job is performed. Policy makers should be cautious when understanding human motivation based on this theory, simply because giving the employees decent pay, clear job description, and healthy communication will not generate motivation without giving them the floor to lead and innovate.

Vroom expectancy theory draws a mathematical relationship between effort-performance, performance-reward and rewards-goals (Vroom, 1964). Bandura's Social Cognitive theory puts goals, self-progress evaluation, expected outcome, self-efficacy, values and comparisons as major components of motivation (Bandura, 1986).

Equity theory sheds light on another perspective that workers tend to compare their outcomes and inputs to peers (Robbins & Judge, 2013). Factors such as effort, self-image, and colleagues were considered and leaving job was an option when workers perceive inequity. Furthermore, the perception of managers as being fair was another component that created the organizational justice theory (Latham & Ernest, 2006). It included three types of fairness, organizational justice that is reflected on salary schemes. Procedural justice through appraisals, and interactional justice that entails communications and respect in workplace (McAuliffe, E., et al., 2009).

Self-determination theory identifies internal and external components of motivation (Gagné & Deci, 2005). The internal one is about the sense of using own will and the external is related to pressures exerted upon the worker. In that sense, motivation is a multidimensional process that is affected by fulfilling the need to be volitional and competent (Vandercammen, 2014).

Locke, 1991, developed a cumulative framework for the above-mentioned theories. He suggested that reaching the ultimate goal is the primary step, followed by consistence with values. Self-efficacy and organizational commitment play the role that modulate performance and subsequent satisfaction and motivation (Locke & Latham, 1990).

In conclusion, content theory of motivation was a preliminary approach to understand how motivation starts. Therefore, it focused on the individual traits, passion, interests and personal values. Process theory is more comprehensive, as it looks at those elements, but in combination with the surroundings. Motivation of an employee is matter of personal drive to achieve, willingness to succeed and consistency with own values. These can be the core of motivation; however, catalytic factors are no less important than those individual-based. Actually, they can synergize or totally deviate the employee from his/her initial values and drives. Securing sound work environment, linking performance to effort and rewards, paying attention to justice in payment, treatment and promotions are all critical factors that should be in line with personal traits to create a threshold of motivation for employees. Other variables like pressures and technical challenges can be variant according to the human nature, but still should be standardized in order not to affect outcomes to the extent that contradict with effort and performance, that in turn reflect on motivation and satisfaction.

2.5 DETERMINANTS OF MOTIVATION

The conceptual framework of Franco et al (2002) is the most commonly adopted in illustrating the determinants of health worker motivation. They can be grouped into individual processes, immediate organizational work context and cultural dynamics. Individual processes entail alignment with personal values, expectations and self-efficacy. Management,

communication, autonomy and feedback are included in organizational context. The cultural component is composed of relationship with beneficiaries, norms and leadership.

Dearth of literature about determinants of motivation of HRH on primary level

Determinants of motivation have been studied at the level of developing countries; however, research at the level of low- middle-income countries is not abundant (Bhatnagar, 2014). Furthermore, studies usually focus on the secondary and tertiary levels not on the primary care level that encounters many challenges regarding the organizational management, resource allocation and calibers of the workforce especially in the public sector. Considering these factors with the fact that medical doctors usually seek high-income positions in urban areas instead of rural, private rather public, and abroad better than domestic settings. This even puts more constraints on the primary level structure, and require extensive research to maintain the interest of physicians to practice within this exhausting system.

Individual factors

Based on the assumption that motivation is an internal process in which external stimuli from the environment combine with internal characteristics to form the “willingness” to invest in the job. Although personal variation affects the outcome of motivation, there are common themes such as humane features, career opportunities, educational history, exposure, desire for appreciation, and the desire to be positive and serve the community (Mbindyo, et.al, 2009; Malik, et.al, 2010; Chandler, et al, 2009; Sheikh, et al, 2012). When individual factors are not satisfied, workers tend to try other strategies to compensate for either inside or outside the workplace. Moreover, the relative importance of these needs usually fluctuates and does not follow a fixed arrangement (Bennett & Franco, 1999).

Organizational factors

Two groups of organizational factors exist, resources and structures (Franco, et. al, 2002). Organizational resources encompass financial and non-financial incentives. Focusing on low-middle income countries, worker pay is a major setback especially among health workers leading to high attrition from public positions, shifting to private sector and even migration to other countries (WHO, 2004, Willis-Shattuck, et al. 2008). Research debates whether pay is the most important condition for motivating healthcare workers. Many studies conclude that the lack of monetary incentives and allowances are translated into a sense of under recognition of healthcare worker efforts (Mbindyo, 2009; Agyepong, et al., 2004). Consequently, many systems started Performance-Based Financing (PBF) to enhance pay. However, empirical evidence was controversial even in low-middle income (LMIC) context. For instance, in some African countries, the increase in salaries had a positive effect (Kalk, et.al, 2010; Paul, 2009; Soeters, et.al, 2006; Population Council, 2013; Vergeer & Collins, 2008; Busogoro & Beith, 2010), on the contrary of the case in a study in Afghanistan and Uganda (Dale, 2014; Morgan, 2010). The main frustrations from PBF were the disparities in payment and correlation to workload (Fox, S., et al., 2013; Ssenooba, et.al, 2012; Morgan, 2010). Lohmann et al., 2016 criticized performance-based financing by applying the self-determination theory of motivation. He argued that it does not necessarily have an adverse effect on intrinsic motivation but could in fact affect both intrinsic and extrinsic motivations, depending on how it is designed, implemented and evaluated.

On the other hand, non-monetary incentives are being investigated in literature. Some researchers argue that work environment is more critical, that it may be even be more important than financial factors in a LMIC context (Purohit & Bandyopadhyay, 2014). Housing in remote areas, continued education, trainings are examples of these incentives (Kotzee & Couper, 2006;

Kyaddondo & Whyte, 2003; Marinucci, et al. 2013; Rao, et al., 2013; Fogarty, et al., 2014). It is not then surprising to find that among key factors that dissatisfy healthcare workers are the scarce career aspirations, and the lack of professional trainings (Faye, et al., 2013; Delobelle, et al., 2011; Alhassan, et al., 2013).

The second component of organizational determinants is the structures. Efficient management and leadership proved to enhance healthcare worker motivation (Dieleman, 2009; Tran, 2013; Kumar, et al., 2012). They are reflected on clarity of organizational goals, securing equipment, medicines, proper staffing, security and efficient communication with higher authorities (Bodur, 2002; Delobelle, et al., 2011; Alhassan, et al., 2013). In addition, team spirit and sense of ownership are thought to flourish the work conditions (Delobelle, et al., 2011, Tran, 2013). Similarly, failures in management, inefficient communication, lack of empowerment and autonomy, perceived injustice and lack of transparency and performance feedback share in the demotivating and attrition of health workforce (Marinucci, et al., 2013; Leshabari, et al., 2008; Faye, et al., 2013).

Culture and community factors

Being human beings in the first place, and bearing in mind that organizations do not function in a vacuum, the empathy, the insights, interactions, and ingenuity of health workers beside their intellectual capacities are critical in negotiating the social contexts. These factors determine their work environment and professional potential. Accordingly, in a people-centered health system, the social context is a key characteristic that should be considered (Sheikh et al., 2014). The social context entails the norms and structural forces that are reflected in social justice, or to the contrary may lead to stifled lives. Thus, organizations with internal cultures not complying with the broader societal culture will encounter difficulties both within and without (Franco et. al,

2002). Thus, individual workers whose values do not align with those of the organization may be less willing to devote their personal resources towards organizational goals.

Health, being a service, its organizations should consider the patient-provider relationship; the clients have their own values, beliefs and expectations. There are two main factors that affect this communication, the general agreement about what a good service is, and the links of health workers to the society (Franco, et.al, 2002). Also, recognition from the community is a source of motivation and satisfaction (Mathauer & Imhoff, 2006). For instance, standardization of the service in all public hospitals closes the door for patient expectation or assumptions about the regimen he/she gets. In this case, the patient knows that the same procedure will take place regardless of the hospital location, or the physician's background. Interestingly, there are some studies that build on the connection between health workers and their community and conclude that they seek their client appreciation more than their supervisors (Tendler and Freedheim, 1994) do.

Razee et al. (2012) emphasize on the relevance of the perceptions of the community about health workers' profiles, and how the respect derived from their jobs is an enabler of quality performance. The sense of community ownership of health system enhances mutual trust and cooperation between health workers and their community. A commonly encountered aspect is the gender and family life dual burden. Women health workers usually report this type of challenge.

Wu D, et al (2014) shed light on violence as a component of the sociocultural factors affecting motivation of health workers. In a community dominated by lack of security, demotivation of health workers generally and females particularly is a common consequence. Violence against physicians and damage to health facilities contributed to the sense of low morale among doctors. Reasons behind deteriorated patient doctor relationship reflect the complexity of

the issue. Doctors are perceived to lead a profit-seeking behavior especially with low pay and a lack of incentives (Yip, et al, 2010). Moreover, patients believe that this attitude jeopardizes the quality of care and conflicts with the Hippocratic Oath. The role of media in doctor excoriation for “wrong” management and occasional cases of outrageous high medical costs further complicates the situation (Jie, 2014). The fact that patients have better access to medical information through other means than their doctor does rendered them more demanding as well (Wu D, et al, 2014).

A major contributor to violence in health facilities is the large portion of out of pocket expenditure on health care (Health Statistics in China, 2012). Moreover, long waiting times, short consultation times and insufficient communication and counselling breed tension between patients and doctors. The frustration is mutual, patient expectations are not met, and workload on physicians is extraordinary (Wu D, et al, 2014).

To sum up, being a health service provider matches the individual will to be positive in the community. Organizational factors includes resources such as satisfying pay, bonuses, training opportunities, and career advancement options. Structural regulations in the organization are also key determinant of motivation. Clear job descriptions, team communication, transparency, efficient leadership, performance-based management and fairness all contribute to healthy organization environment. Up to this point, the motivation of HRH can be the sole responsibility of the Ministry of Health and Population. However, considering the message communicated to the society as well as the cultural orientations of the beneficiaries are complementary to the above-mentioned determinants of motivation. Security and gender equality at healthcare facilities should be perceived as baseline for HRH to function. In a citizen-centered system, both providers and patients know their rights and responsibilities. A standardized practice spares many frustrations and bridges the gap between expectations and reality, for all players in the health system.

2.6 CONSEQUENCES OF DEMOTIVATION

Migration

The above-narrated determinants of motivation need knowledgeable management. The way these factors interact shapes the movement of health workers including physicians across rural/urban, public/private or national/international territories of health systems. The phenomenon of internal and international migration further enriched the literature with studies to understand why and how health workers move, and how this influences health systems and indicators, and how to adjust to these (Kroezen et al., 2015, Labonté, 2015). Internal migration can lead to shortages of work force and worsens previous weaknesses in rural health systems and inequities in healthcare access, especially in underserved areas. Huicho et al. (2010) provide a helpful framework for conceptualizing internal migration and for evaluating interventions that aim to increase access to health workers in underserved communities. Others have estimated the cost-effectiveness of policy measures to retain workers in rural areas (Keuffel et al., 2016; Lagarde et al., 2012). At the global level, the past decade has seen the emergence of the World Health Organization (WHO, 2010) Global Code of Practice on the International Recruitment of Health Personnel, which aims to strengthen data on international recruitment and migration and to support strengthening local health systems to promote retention and research to document the early implementation of the Code (Tankwanchi et al., 2014; WHO, 2016).

Factors that shape that international migration of health workforce are usually referred to in the literature as the "push and pull" factors (Rutten, 2009; Bärnighausen & Bloom, 2011; Astor, 2005). Vujicic et al. (2004) claim that the gap in earnings between importing and exporting countries can be gigantic that whatever the increase in source country pay, this cannot affect the rates of emigration. Putting the nonfinancial reasons into consideration as well, highlights the

conclusion that there is no single magic bullet that will stop health professional migration, nor is it obvious that stopping migration altogether would be beneficial (Grignon, et.al, 2012). Instead, managing the flow of migration is a matter of protection to developing countries health care and investments. Realistic approach in management here refers to linkage between graduates decisions of migration and professional education systems (Walton-Roberts, 2015).

Brain drain

Originally used to describe the migration of skilled professionals to the USA in the 1950s (Ansah, 2002), brain drain was later used to reference medical professionals who moved from the Global South to service the Global North's health demands. Later, by the 1990s it was perceived as “*perverse subsidy*” (Mackintosh et al., 2006), that hindered the Global South health care systems from meeting their Millennium Development Goals (Willis-Shattuck et al., 2008). For instance, Africa, with 25% of the global disease burden, retains only 3% of global health workers (Misau et al., 2010). Efforts to mitigate this drain was in adoption of terms like “brain circulation” that migrating health professionals participate back in their home countries in capacity building and health system reforms, but from another seat; the as educators and trainers (Hagander et al., 2013). In 2010, the 63rd World Health Assembly adopted a code to ethical and voluntary practices to discourage active recruitment of health workforce from developing countries facing critical shortages (WHO, 2017).

In short, the low-middle income countries are at high risk for losing their skilled healthcare workers, because coping with the pull factors in more developed nations is out of their capacities. However, eliminating the push factors can highly twist the image to their side. The resulting loss is not just a matter of lack of needed personnel to achieve the sustainable developmental goals, but also loss of investment in the medical education and training for the brains that drain to lands of

better opportunities. This problem should be a priority in the plan of action of the Ministry of Health and Population in cooperation with other relevant stakeholders. Measures to mitigate the loss of practitioners in public sector and underserved areas should be taken for the sake of social justice.

2.7 INTERNATIONAL APPROACHES TO ADDRESS HEALTH WORKFORCE MOTIVATION AND CONSEQUENT SHORTAGES

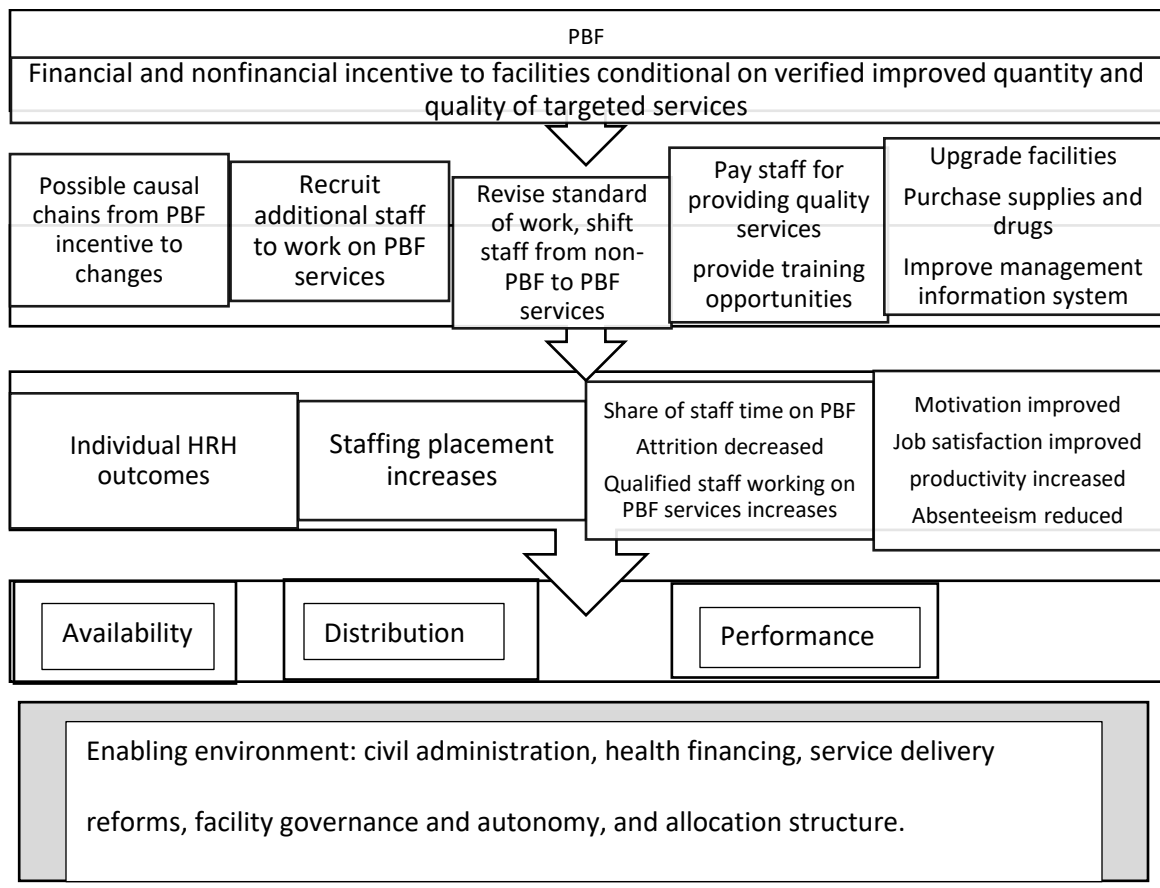
Based on theories and determinants of motivations, many countries have developed plans to evaluate and implement solutions for better HRH performance. As presented in the following section, challenges in HRH management is not just a financial problem, as it is quite evident in low and high-income countries. The types of obstacles vary and lead to shortage in skilled HRH. In this section, there is a presentation of success and failure experiences to show that it is not just about the intervention to address the shortages, but rather how these solutions are produced and implemented.

Performance based financing

Performance-based financing is a tool for linking payment to performance. Performance-based financing is the reverse of the line-item budgeting that builds on input estimation. This approach gives organizational units the autonomy to control their financing policies through contractual rather than hierarchical relationships. Outcomes are the result of the whole team performance, so, it is not a mean for measuring individual's performance. It rather takes into account his/her contribution to the whole mission through working days, duties and qualifications (Meessen, et al, 2006). Figure five illustrates how PBF enhance HRH management. When financial

and non-financial incentives are provided conditional on verified enhanced quantity and quality of health services, the determinants of motivation are addressed as follows.

Figure 4 General conceptual framework on the effects of PBF on HRH



Source: Shen, et al. (2017) "Incentives to Change: Effects of Performance-Based Financing on Health Workers in Zambia." *Human Resources for Health* 15, no. 1 (February 28, 2017): 20. <https://doi.org/10.1186/s12960-017-0179-2>

Better outcomes relate to individual sense of achievement and being positive to the community. Improved staffing to meet the goals make the service available and accessible for beneficiaries. This creates cultural acceptance, synergized by the standardization of procedures. Linking bonuses and promotions to performance will decrease attrition, increase job satisfaction and reduce absenteeism. Organizational reforms that enhance peer pressure provide training opportunities and promote accountability and quality will improve productivity and technical

competence. All contribute to overall performance and distribution of health services. In the presence of enabling conditions such as reforms in governance, laws and policies.

In Burundi, Nurses offer basic health services through health centers and physicians serve in hospitals. They have four physicians and thirty nurses for 150,000 people. The health system was severely destroyed after a twelve-year civil war. The government with international NGOs introduced the performance based financing for health services in 2006 as a pilot, which became a national policy in 2010 (Rudasingwa and Uwizeye, 2017). It addressed the low utilization of health services, especially for maternal health services, poor quality of care, low motivation of health workers, non-availability of health services around the clock and poor management and organizational structures of health facilities (Busogoro and Beith, 2010). The government provided 70% of all expenses and the rest was supported by international aid. The portion of PBF subsidies to the total health expenditure in Burundi has been increasing from year to year, for instance, from 16.5% in 2010 to 46% in 2012 (Chaumont, ET AL, 2015). PBF bonuses accounted for, on average, 20% of the total health facility revenues in 2010 and in 2013, this proportion increased to around 40%. This resulted in a fivefold increase of the revenues of health facilities from its first implementation in 2006 up to 2010, translating into an increase of salaries and bonuses for medical staff. For example, the monthly salary (including bonuses) of a nurse increased on average from \$75 in 2006 to \$262 in 2011 and for physicians from \$100 to over \$300 in the same period. There was a predefined system to calculate bonuses, with considering the qualification, years of experience, and work performance. However, the salaries of health workers are still low compared to costs of living. Despite that, PBF retained medical staff and increased coverage at underserved areas (Sibomana and Reveillon, 2015). Health workers made additional efforts in service provision because they were rewarded financially. Moreover, absenteeism and unjustified breaks were

reduced. Hospital staff reported that they modified their attitude to adhere to national treatment guidelines, worked to achieve best scores in PBF scheme. Furthermore, they shifted to a culture of working better together and innovating for better healthcare (Rudasingwa and Uwizeye, 2017).

Performance based financing is not a magic tool. Despite being successful in many cases (Dale, 2014; Fox, et al., 2013; Kalk, et al, 2010, Paul, 2009; Soeters, 2013; Population Council, 2013; Vergeer and Collins, 2008; Busogoro and Beith, 2010), it did not prove success in the case of Uganda, for instance. Ssenooba et al. (2012) highlighted deficits in implementation of the framework and supportive environment that hindered the expected progress, such as uncertainties to accommodate the mismatch between the service provision and the expectations. In addition, studying the role of multiple players in the equation should precede the implementation.

Managerial efficiency

Shifting from physician-centered model of care into shared-care model, is the trend in the best practicing primary health units in the United States (Sinsky, et al, 2013). Through this shift, there are major changes to the approach that includes five main components:

- Proactive planned care, through which patients get their laboratory tests ready before meeting the physician through counselling about their case.
- Sharing clinical care among a team, with expanded rooming protocols, standing orders and panel management.
- Sharing clerical tasks with collaborative documentation, non-physician order entry, and streamlined prescription management.
- Improving communication by verbal messaging and in-box management
- Improving team functioning through co-location, team meetings, and workflow mapping.

Comprehensive reforms

Bangladesh, similar to Egypt, has a pluralistic health system that is responsible for policymaking and service provision (Ahmed, 2013). It has developed and implemented a number of health-related policies and provisions concerning retention of HRH. According to Rawal et al (2015), they followed a scheme that covers the education, management, financial, personal and professional support areas. They adopted a quota system to allocate admissions in practice based on geographical needs. They provided scholarships for less advantaged students. They revisited curricula to reflect rural needs with clinical rotation in underserved areas. Further, in the public sector, every newly recruited medical doctor must serve at least 2 years in rural areas, under certain motivations in working environment and financial incentives. They addressed practices codes, regulations to work conditions and invested in paramedical staff training, as well as social recognition techniques. Moreover, the government provided promotion opportunities, career development plans and introduced telemedicine and technology to bridge the gaps in service. Despite all these changes at the operational level, some bureaucrats in high positions opposed some of the rural retention policies, whereas people in favor of these policies were not sufficiently empowered (Joarder et al, 2018). Accordingly, there are still challenges to face at the political level to be able to monitor and evaluate these –theoretically- sound policies.

Training complementary personnel

In the United States, the shortage in physicians is estimated to reach up to 120,000 physicians by 2030, especially on the primary health care level (Association of American Medical Colleges, 2018). There are set of strategies by the Association that include an increase in the programs for physician assistant, beside the efforts of medical schools and teaching hospitals in training physicians in a team-based manner and through inter professional care. Moreover, the

Association works on developing innovative care delivery and payment models, and integrating cutting-edge technology and research into the patient care environment. It also supports legislation that would increase federal support for an additional 3,000 new residency positions each year over the next five years.

The concept of physician assistant is widely considered where primary care practitioners are lacking or costs are challenging (Cawley & Hooker 2003). The United States Physician Assistant program is guiding the pilot programs in England, Scotland, Canada, the Netherlands, South Africa and Ghana (Legler et al. 2005). Taiwan also lead a program that upgrade nurses into physician assistants (Lo, 2005).

The idea behind the physician assistant program is to provide quality care through shifting clinical responsibilities with the help of current technologies to non-physicians team members and even to patients themselves. Commonly, physicians perceive many tasks at the primary care to require less qualified team members to handle (Sinsky, et al, 2013). Moreover, given that the patients are aware about the role of physician assistants, can match this role to their needs and had exposed to them in a positive experience, they are more likely to be satisfied to get the care they need though them, as per the survey by Dill, et al (2013).

To conclude, the problem of physician shortage needs proper initial evaluation and study of reform strategies. Engagement of stakeholders including physicians themselves is necessary to produce tailored interventions to tackle the issue. Understanding that it is a multifaceted problem will reflect on public policies for medical education, managerial efficiency at health facilities, paramedical personnel recruitment and giving the floor for people to improve their organizational performance. In each presented alternative, there should be some resistance met for change. However, successful experiences relied on real understanding of the roots and magnitude of the

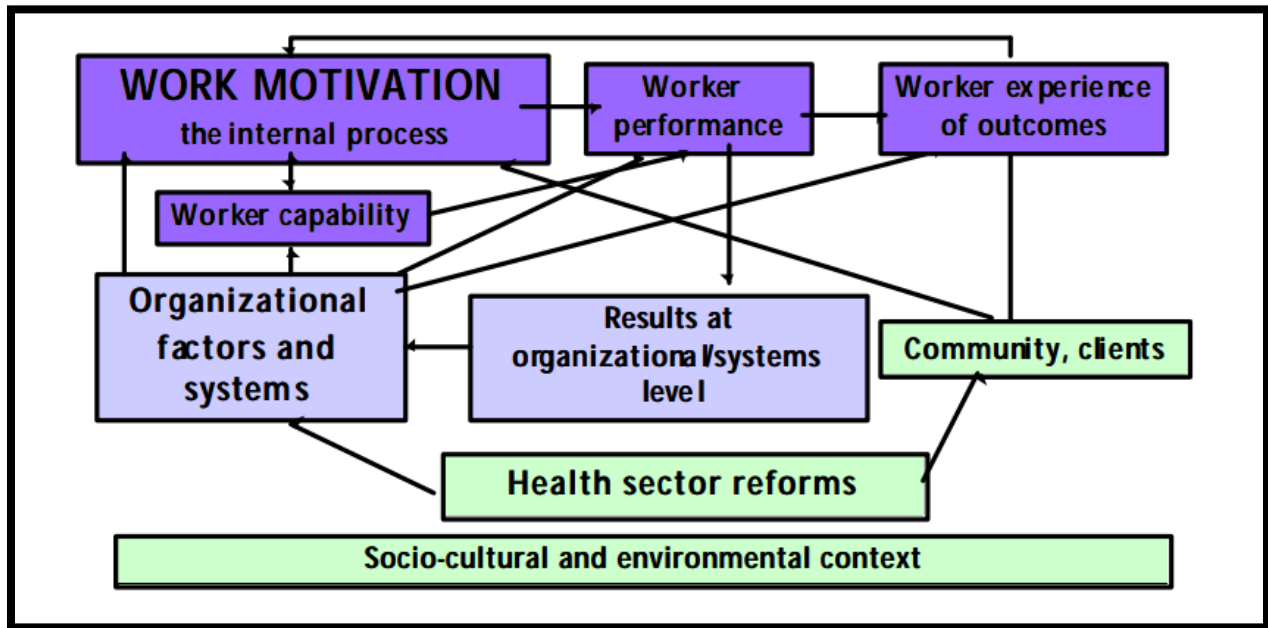
problem. Working on the enabling environment is a key success factor for performance-based financing and training the complementary staff. However, it was the major obstacle in Bangladesh despite the comprehensive model they designed.

3 CHAPTER TWO: METHODOLOGY AND CONCEPTUAL FRAMEWORK

3.1 CONCEPTUAL FRAMEWORK

As mentioned in the literature review, motivation is usually defined as “*a psychological process aimed at achieving both personal and organizational goals, developed among workers due to a combination of their personal needs and desires, the organizational context within which they work, and the community of which they are a part*” (Bhatnagar, 2014). The conceptual framework by Franco et al. (2002) was one of the first to apply various theories of motivation to develop a conceptual framework for understanding determinants of motivation for the health workforce, especially people working in low-resource settings. The key attribute of their conceptual framework, however, was the postulation that motivation develops in individuals because of the interaction between individual elements, immediate organizational work context and socio-cultural dynamics. Most of the subsequent research on health worker motivation has adapted and used Franco et al.’s framework. This framework is very relevant to this study because it entails detailed understanding of the various theories of motivation. It relies on process theories and presents efficient interaction between the organizational, cultural and individual factors that determine the motivation of HRH. It emphasizes the symbiotic relationship between HRH motivation and health sector performance previously highlighted by Maritneau and Martinez (1996).

Figure 5 Conceptual framework for HRH motivation



Source: Franco, L. M., Bennett, S., & Kanfer, R.(2002). Health sector reform and public sector health worker motivation: a conceptual framework. *Social science and medicine*, 2002 Apr;54(8):1255-66.

Individual processes entail a person’s goals, values, expectations and self-efficacy. The organizational factors are divided into organizational resources (infrastructure, medicines, supplies, human resources, and monetary funds), structures (hierarchies, autonomy, management, and feedback), processes (communication, procedures of work) and culture (set of shared norms, leadership). The broader socio-cultural factors include association between existing social norms and functioning of an organization as well as societal values and expectations expressed as relationships between clients and health workers.

3.2 METHODOLOGY

Overall research strategy

This is a descriptive exploratory study that adopts qualitative tools to understand the motivation determinants of medical doctors who practice in the Egyptian MOHP. It puts the

determinants of motivation against the factors listed in the conceptual framework and literature review, to analyze the retention of practicing clinicians in the government sector in Egypt. A qualitative strategy was adopted to allow for deep understanding and correlation between the different points of views of stakeholders in the research. Relevant figures about the dimensions of the problem from key informants are also presented. Literature review about the health care system in Egypt from the perspective of health workers also sheds the light on the current knowledge about the motivation determinants and reform attempts. This way, the study can draw an integrated image about the issue.

Sampling and Participants

Based on Miles and Huberman (1994), this research used a non-probability purposive sampling technique through identifying key informants. This method allows people of high relevance to the topic to add to the exploration of the issue. Selection criteria for participants highlighted the time factor for each group of interviewees. Practitioners in MOHP, private sector or abroad at least have been in their practice for one year. This way, the credibility of the information they give is based on real exposure and experience. A sample of 18 medical graduates working in six different health facilities in the MOHP were brought into three focus group discussion about their work experience. Facilities included two urban primary health units in Cairo, one rural primary health unit in Giza, one general hospitals and one teaching hospital in Cairo, in addition to one general hospital in Giza. These geographical areas were selected as per the convenience of the study. Discussions aimed at covering the individual, organizational, and cultural determinants of motivation. Respective managers were interviewed about their reflections about the same determinants, how they perceive the problem and the efforts made to improve the

situation. In-depth interviews included one manager and one director of primary health units in Cairo and General Manager of general hospital in Cairo.

Another focus group discussion with six clinicians who either quitted the MOHP and practice in private or dual practice was conducted to explore the motivation determinants at the private sector. In addition, five in-depth interviews with Egyptian doctors who decided to quit work in the government sector and migrated and to UK, Germany and Maldives, to reflect on this alternative.

As Marshal and Rossman indicate, a study based on personal experience is best followed by in-depth interviews. To triangulate the data, one in-depth interview with a member of Council of Egyptian Medical Syndicate and another in-depth interview with a member of the preventive healthcare sector at MOHP were conducted to understand the recognition of the problem and advocacy efforts, as well as feasibility of policy recommendations.

Data collection

For participants from MOHP, focus group discussions took place at a university hospital where the participants were attending lectures as part of their master's degree, or fellowship training. The focus group discussion with private sector practitioners was conducted in their work facility in Cairo. Interviews with migrant doctors was through Skype. Medical syndicate council member and other policy maker were interviewed in their vicinities, as well. Focus group discussions ranged between 45-60 minutes, interviews ranged between 30-45 minutes, and the researcher conducted all.

Table 2 List of participants with their respective jobs and data collection tool

Participants	Place of work	Number	Tool
Physicians currently practicing in government	Two urban primary health units in Cairo	18	Three Focus group discussions, at a university hospital
	One rural primary health unit in Giza		
	one general hospital in Cairo		
	One teaching hospital in Cairo		
	One general hospital in Giza		
Managers / heads in the MOHP	one urban primary health unit in Cairo	1	In-depth interview, at place of work
	One general hospital in Cairo	1	In-depth interview, at place of work
Physicians quitted the MOHP and practice in private sector / dual practice	Two private hospitals in Cairo	6	One focus group discussion, at private hospital in Cairo
Physicians quitted the MOHP and migrated to practice abroad	Egyptian doctor practicing in UK	2	In-depth interview (online)
	Egyptian doctor practicing in Germany	2	In-depth interview (online)
	Egyptian doctor practicing in Maldives	1	In-depth interview (online)
Member of the Council of the Egyptian Medical Syndicate	The General Egyptian Medical Syndicate, Cairo	1	In-depth interview, at EMS
Member of the preventive healthcare sector at the MOHP	The preventive healthcare sector at the MOHP, Cairo	1	In-depth interview, at MOHP

Data analysis

Focus group discussions and interviews were recorded and transcribed separately. Coding into themes followed the conceptual framework. Results were clustered into the individual, organizational and cultural factors that determine motivation of Human Resources for Health (HRH). Views of the managers and government personnel were integrated in these themes. Private sector practitioners and migrant physicians were listed as consequences of demotivation. Finally,

the responses of the government-based employees were presented with the medical syndicate perspective.

3.3 ETHICAL CONSIDERATIONS

As stated by (Babbie, 2013:64), the concepts of “*voluntary participation*” and “*do no harm*” are conceptualized into the informed consent. All participants were verbally informed about the objective of the interviews and focus group discussion, and signed the consent form. The researcher was introduced as a student at the AUC who is running a qualitative research study as part of completing her thesis to obtain a master degree in public policy. The participants were mentioned by their current jobs, as it is more relevant to the study. Their names were anonymous.

3.4 LIMITATIONS

The complexity of how motivation is defined, measured and influenced is an important limitation encountered by this research. There are various theories, frameworks and tools to assess motivation. Both quantitative and qualitative methods are used in studying its determinants and measuring the impact of certain interventions carried out to enhance the level of motivation among healthcare workers. There is no agreement about existing methods. In this context, the current tools should be critically addressed, and there may be some relevance to adding persistence and accuracy of performance as indicators (Touré-Tillery & Fishbach, 2014). In addition, following up with the results of descriptive studies with appropriate programs is vital to give insights about the determinants that were supposed to influence motivation. This way, we can further understand how the change happens, and anticipate the compliance of healthcare workers to the interventions.

Securing interviews with more key informants from the government was not feasible. This area needs further investigation to build a concrete knowledge about the situation and the capacity of the MOHP and other stakeholders to address challenges of HRH.

3.5 RESEARCH MOTIVATION/ ROLE OF RESEARCHER

As a medical graduate, the researcher has been witnessing the daily suffering of all the stakeholders of the health system in Egypt. The complexity of the problem lies in the lack of a comprehensive approach in dealing with it. Each component of the system has its specific constraints. Being personally exposed to the situation of the physicians encouraged the researcher to document an objective analysis of the healthcare workforce in Egyptian health system, specifically physicians. This research aims at alarming the policy makers about the consequences of continuous physician attrition. In addition, providing recommendations through evidence-based policymaking.

4 CHAPTER FOUR: EGYPT HEALTH CARE SYSTEM

This chapter presents a reflection about the Egyptian context and what the literature covers about the composition of health system from the prospective of HRH management. The Egyptian situation institutionally, logistically, and managerially shows many challenges that drive physicians to seek other tracks other than practicing in MOHP facilities. Evidences from literature about leakage of doctors to private sector, migration abroad and the consequences of these practices are documented.

4.1 EGYPT HEALTH SYSTEM: PHYSICIANS, SUPPLY, AND ATTEMPTS TO REFORM

The MOHP has a wide network of facilities including 4988 primary health units and centers, and 659 hospitals that provide secondary and tertiary levels of care. Regulation of medical practice and planning of health policies are also among its mandates. However, these services are often under-utilized with over 60% of all primary care needs covered by private sector (El-Saharty, et al, 2004).

Table 3 Healthcare facilities affiliated to MOHP

Type of facility	Category	Number
Primary	Urban health center	103
	Rural family health unit/ center	4301
	Family health center	350
	Child care center	147
	Comprehensive clinic	87
Secondary and tertiary	MOHP affiliated hospitals (curative care organizations, teaching hospitals, institute organizations, health insurance organizations)	521
	Other public hospitals	138

Source: CAPMAS, 2014

Institutionally, the MOHP has intersections with more than 29 ministries and government entities. Mandates are usually ambiguous, with lack of coordination and communication. This is

evident in the relation between MOHP and Ministry of Higher Education (MOHE) that adversely impacted the management of HRH (Nakhimovsky et al., 2011). Moreover, the supply of physicians, medical education curricula and postgraduate studies are not compiling with the needs of the health market. On one hand, the administrative structure is over-centralized, and the decision-making process lacks objective indicators and information. Accordingly, policy makers do not fulfill local needs. The gap between expectations and reality increased and aggravated by the deficient health information system, and weak reporting and documentation. Furthermore, the WHO and EMRO (2011) reported that the ministry functions in periods of uncertainty regarding its priorities with high turnover of ministers and decision makers beside the exhausted governance system. Being in charge of provision, funding, regulation of health sector beside planning, budgeting, resource allocation, regulation, monitoring, and evaluation exhaust the already incompetent capacities of the MOHP. Furthermore, the management mechanism for HRH, in terms of supervision and evaluation of working performance, workforce entry and exit is also insufficient.

4.2 WORK ENVIRONMENT FOR PHYSICIANS

This deficient management framework has one potential opportunity that gives public hospitals more abundant training opportunities, simply due to lack of code of conduct especially with the high flow of patients. Accordingly, many practitioners choose to maintain their position in the public sector and supplement their income by private practice. However, many public hospitals have neither capacity nor attractiveness to retain or motivate human resources. Moreover, patients' attitude is an emerging issue for physicians to deal with besides the security conditions of public hospitals.

Therefore, the “leave without pay” acts as the solution for employees willing to guarantee their position. They are still counted as employees while they are actually not attending work in that hospital. This highly misleads the data about the physician density in Egypt. One beneficial solution is to look at the number of registered number of physicians in the syndicate and those registered in the MOHP (including those in leave without pay). This give an idea about the gap between supply and coverage.

Table 4 Percent staff registered in syndicates vs staff registered in MOHP

	Staff registered in syndicate	Staff registered in MOHP	(%) OF MOHP staff in total
Physicians	227,822	86,810	38.1
Dentists	37,579	13,548	36.1
Pharmacists	127,264	22,329	17.5
Nursing	274,691	124,058	45.2
Technicians	36,594	32,009	87.5
Total	703,950	278,754	39.6

Source: World Health Organization Regional Office for East Mediterranean (WHO/EMRO). (2011). Egypt Health System Profile (2011).

4.3 ROLE OF PRIVATE SECTOR FOR PHYSICIANS AND PATIENTS

Because of the above-mentioned challenges, patients seeking better quality, outcomes and satisfaction especially in rural areas shift to private sector. The private sector bears the expectation to provide high-quality care, but there is no formal regulation to monitor and evaluate its performance (Nakhimovsky et al., 2011). In Egypt, government facilities provide service at almost free of charge rates, with low salaries for the health workers. Simultaneously, private sector charges high costs and provide higher salaries for employees. Challenging points include effective coordination and integration with the private sector that is largely growing fast but unregulated.

Sabry, et al (2004) highlighted that salary scales in the government drive the physicians to supplement their income through practice in the private sector. Literature defined this phenomenon

as *dual practice*. Most health workers rely on private sector for their income, while maintaining their service in public sector. At the end, less fortunate patients can access free service and others who can pay choose the private facilities. In this sense, if dual practice is prohibited, it will compromise retaining of health workers in public settings. However, it is associated with many drawbacks like public-to-private brain drain, predatory behavior among HRH, impact on work hours and ethos (Zhang, 2015). For instance, this bifurcation compromises the healthcare delivery and encourages providers to devote their efforts in the public settings to generate referrals to their private practice. Furthermore, this practice leads to more corruption and absenteeism that negatively influence the governmental sector (Zhang, 2015).

4.4 PHYSICIANS IN THE REFORM PLANS

Since 1997, the MOHP had a reform plan aiming at restructuring staff policies, ending guaranteed employment for all medical school graduates, decreasing the total number of staff, recruitment based on the needs of the underserved areas and creating incentives to encourage the staff to bridge the gaps in healthcare delivery (McEuen, 1997). In 2006, trainings were offered on healthcare reform, hospital managers received MBA programs in the USA through the support of USAID, as well as specialized trainings for other personnel, in collaboration with faculty from distinguished American institutes (El-Gabaly, 2007).

Health Expenditure

Egypt is a low health care spender when compared to neighbors from similar economic status, as in table 5. The percentage of out of pocket (OOP) spending is within the highest among all the middle-income countries in the region, as in figure 6.

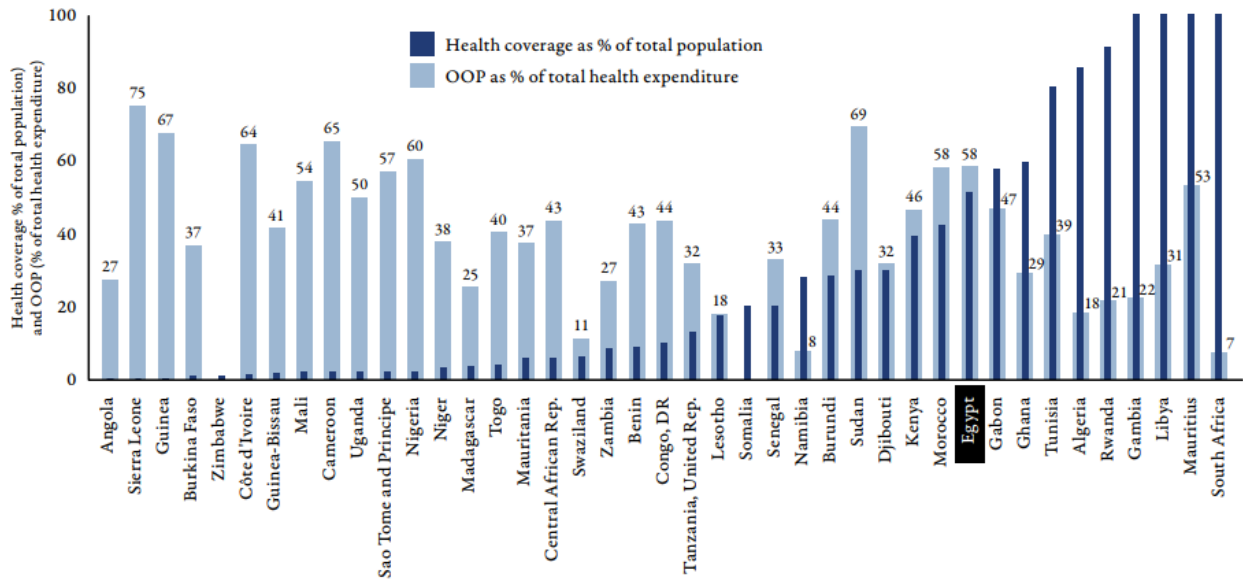
Table 5 Egypt Compared with Other Middle-Income Countries in the Region in 2008/2009

Countries	Percentage of GDP Spent on Health	Government Health Spending as % of THE	Government Health Spending as % of Total Government Budget	Out-of-Pocket Expenditure as % of THE
Algeria	4.1	80.6	9.2	18.3
Djibouti	7.0	76.9	13.9	22.8
Egypt	6.2	24.8	4.3	71.8
Iran	5.5	39.0	8.7	58.9
Jordan	8.6	60.8	10.2	42.3
Lebanon	8.1	49.2	12.1	40.5
Libya	3.9	66.1	5.5	33.9
Morocco	5.5	34.4	7.0	56.6
Syria	2.9	31.0	4.6	69.0
Tunisia	6.2	54.1	10.4	40.0
Regional Average	5.8	51.7	8.6	45.4

Source: Nakhimovsky S., Glandon D., Rafeh N., & Hassan N. (2011). *Egypt National Health Accounts: 2008/09*.

The government health spending as a percentage of total budget is comparatively lower than in other middle-income countries in the region (World Bank, 2015). Despite the high legal coverage rates, still out of pocket expenditure exceeds 50 per cent of total health expenditure.

Figure 6 Government health coverage and out-of-pocket payments in selected African countries, 2011



Source: International Labour Organization (ILO). (2014). *World social protection report 2014–15*. Chapter 5 and Annex II: Measuring social security coverage.

4.5 MEDICAL EDUCATION AND PREPAREDNESS TO MARKET NEEDS

To be eligible to enroll in an Egyptian medical school, there is a central system for managing students' credentials to allocate them according to their high school grades. Teaching medicine follows the French model throughout a six-year program of undergraduate medical education. There are pre-clinical and clinical components, followed by a Bachelor degree in medicine and surgery. Graduates must do an internship year before licensing to practice as general practitioners (Abdalla and Suliman, 2013). Most of medical schools pursue discipline-based curricula rather than applied integrated methods that are followed in only eight universities out of a total twenty-seven (Abdelaziz et al, 2018). The integrated approach is more student-centered and includes simulation, problem-based learning and community-based education. Despite the resistance to change, the trend is towards this integrated modular approach, using the well-established teaching

hospitals. Egyptian medical schools are engaged in obtaining national accreditation by the National Academic Reference Standards committee that was endorsed in 2009 (NAQAAE, 2009).

According to AbdelAziz, et al (2018), medical schools face a variety of challenges, mainly the large numbers of eligible students, especially in old ones. Along with limited resources, lack of sustainable funding policy, and exhausted infrastructure, there is major concern about the ability to graduate general practitioners who are able to respond to their community health needs. Moreover, Tekian and Boulet (2015) identified the brain drain of medical faculty to other countries as a major setback.

Most of medical graduates prefer to hold a specialty rather than general practice for better opportunities (AlKot, et al, 2015). Consequently, they either choose the academic way to hold a scientific degree (Law 79/1972), or enroll in the professional training of the Egyptian Board Program, that is coordinated by the Ministry of Health and Population (FEB, 2018). The limited capacity of this program to accommodate all eligible candidates, deficient infrastructure and lack of funding are the major constraints facing its progress. In both ways, assessment is knowledge based skill acquisition with less proportion dedicated to professional behavior (EMRO, 2015).

Interestingly, Al-Shamsi (2017) proves that there is no correlation between medical students' performance during undergraduate years and their performance as future clinicians. Meanwhile, the student centered approach that depends on the facilitation of students with the guidance of mentors results in less redundant lectures as regards time and frequency (Ikegami, et al, 2017). Moreover, most of the educators in medical schools are clinicians who have base of medicine but not education. Combining the expertise in medicine and education will enhance the preparedness of students to real practice (Royal and Rinaldo, 2016). Through less theory and more practice like laboratory test and bedside maneuver, there can be a room for high quality medical education,

especially in developing countries. Also, incorporating rural needs in curricula can bridge the mismatch between teaching outcomes and community needs (Sanchez del Hierro, 2014).

4.6 ROLE OF MEDICAL SYNDICATE:

The Egyptian medical syndicate, established in 1940, and acted as a member of the Steering Committee for Health Sector Reform (SCHSR) formed by Ministerial Decree no.256 in 1997. It was mandated to oversee the planning and implementation of the initiative of health sector reform (Health system profile, EMRO). However, its role and participation is usually ineffective or not perceived favorably by the government, although article 76 in the constitution mandates the syndicate to possess the legal authority to freely contribute to improving the skills of its members, defend their rights and protect their interests.

Medical graduates are obliged to register in the syndicates to be able to practice medicine (Abdelaziz et al, 2018). The registered members in 2002 were 160, 000 in year 2002 (Al Shobaky, 2004). In 2011, the number exceeded 230,000 members (Charbel, 2011), more than half of them were not registered in MOHP (EMRO, 2011).

The syndicate provides various packages of career development trainings and certificates, as well as other services like medical insurance for its members. Being the legal representative of physicians, the syndicate actively worked on issues like low pay and hospital security through courts. However, the results are not matching to the efforts (EMS, 2017).

4.7 MOTIVATION OF EGYPTIAN MEDICAL DOCTORS

The problem of physicians' motivation at the primary healthcare level is repeatedly reported in high and low income countries (Amiri *et al*, 2010; Al-Eisa et al, 2005; Arab et al, 2007; Bawakid

et al, 2017). Studies from Egypt usually survey hospitals, rarely primary health units. Causes of frustration varies between unreasonable workload, administrative constrains, slow learning curve, unfavorable working conditions and unsatisfactory pay. There is quite scarce research about the determinants of motivation of medical doctors in Egypt. However, the medical profession usually has the general consensus about being exhausting, typically definite specialties are known to be more stressful especially if there are academic demands like working in a university hospital, or working on a master degree during residency (Shams & El-Masry, 2013). The study by Abdo et al. (2015) showed that about two-thirds of physicians in their research had a moderate level of burnout and about one-quarter had a high level of burnout. Reasons entailed the overburdened health-care system in Egypt, especially the emergency sector, understaffing, especially among nursing staff, lack of resources, inadequate salaries, lack of control, and difficult work schedules.

Work environment components like safety, infection control programs, strict procedures to avoid occupational risk, and ease to do the work were not satisfying for the participating physicians in AbdelRahman et al (2008). Career satisfaction, social support, financial aspects, chances of promotion, and work environment were negative elements in the survey conducted by Gamal et al (2008), where only 38.7% of participating physicians showed overall satisfaction with their job at the MOHP.

Looking at medical students as well, through the survey by Atlam (2018) reports high levels of burnout among them in one public medical school in Egypt reaching up to 80%. Disappointment from coursework and achieving academic goals may be linked to the usual medical education form, counting high workload, postponed patient contact, and unnecessary stress on exam performance (Atlam, 2018). These may lead some students to take medication or think about quitting the program. According to Mohamed (2013), 96.7% of the students who were

studied for their motivation to practice within the Ministry of Health and Population especially in rural areas believed that they are more likely to accept practice in rural areas provided they be paid higher salaries. In addition, about two-thirds of them were concerned with the work physical environment and infrastructure. Around 60% reported the importance of clear policies and regulations, while almost 65% emphasized the importance of having promising career opportunities.

Another study by Kamal Elden, et al (2016) among primary, secondary healthcare physicians in public and private settings revealed that more than 60% physicians in PHC believe that the site of health facilities is not appropriate to population distribution. This may be due to inequity in the access and the utilization of the system. More than half of the physicians say there are shortages in some of health care resources and the problem is significantly higher between private (70.6%) and SHC (53.7%) than in the PHC (25%).

Although, the availability of drugs and medical supplies, is a top priority to maintain the sustainability of high quality services for HSRP, (72.7%) and (63.3%) of the physicians at SHC and PHC, respectively, complain of drug shortage. Lack of management skills and poor training in managerial skills is one of the main challenges for the health system (Saleh, 2006). In the above-mentioned study, more than half of physicians mentioned that there is no training on organizational management. Almost seventy-one percent of all physicians believe that there is bias in human resources recruitment and about half of them agree that there is no job description, with no significant difference by place of work. Less than 40% of physicians think that decision-making process is done on scientific base, 72.8% of the respondents say that the information system is not used in decision-making.

On the other hand, Abdel-Salam et.al (2015) confirmed that physicians who were satisfied with the job owed that to autonomy, clear job description, less paper work with long hours of work and frequent shifts, inadequate security and poor career advancement. Impact of trainings related to career advancement was positive and recommended to be integrated in the health system (Ruck & Darwish, 1991). Interestingly, the accreditation of health units of an NGO included integral changes to the work environment and conditions that significantly enhanced the satisfaction of both health service providers and patients (Al Tehewy, 2009).

4.8 RESPONSE TO THE PROBLEM

In an attempt to tracking the demotivated clinicians and study where they prefer to practice to have better opportunities in terms of finance, work conditions, career development and quality of life, the literature gives three major levels of migration. Rural to urban areas, public to private sector, and international migration (Kroezen et al, 2015, Labonté, 2015).

In spite of the repeated declarations by governmental figures, through the past five years, about the shortage in medical staff (Zayed, 2013, Omar, 2017, Reyad, 2018, Hamama, 2018). CAPMAS showed that the total number of physicians practicing in the public sector and affiliated to the Ministry of Health and Population was 103,337 in 2016, compared to 97,707 in 2015. These numbers reflect a problem in physician retention, bearing in mind that Egypt graduates more than 20,000 physician per year (WHO, 2006). Physicians practicing in private sector showed great imbalance between rural and urban areas, as private hospitals hired 23,261 physicians distributed as 22,604 in urban and only 657 in rural areas (CAPMAS, 2016).

The Ministry of Health and Population adopted the policy of “takleef”, to oblige the fresh graduates of medical schools to work for two years in primary health units. The aim was both

strengthening the primary health care system, and covering the shortage especially in frontier and rural areas. PHU received different funding through programs targeting maternal and child health, and family planning. The evidence is that usually physicians move on and do not spend the whole duration (WHO, 2006). In addition, the program for graduating family physicians was adopted by the Egyptian fellowship since 2007, to provide generations of family doctors who are supposed to serve in primary health units (Egyptian Fellowship, 2010). The Egyptian government has provided financial and academic incentives to encourage graduates to pursue a career in family medicine. However, such incentives were found to be unknown to most undergraduates and unsatisfactory for the minority who were aware of them. The most obvious explanation for this lack of awareness is the absence of training on vocational choice during medical school years, leading to students primarily depending on their personal experiences and general knowledge rather than on a sound understanding of advantages and disadvantages of each specialty (AlKot, et, 2015).

Attempts to alleviate this shortage includes delegation of the primary tasks to mid-level cadres, and sparing the specialists to manage more complex stages. For instance, this approach was piloted in psychiatric services that showed to be effective and simultaneously not compromising the role of trained psychiatrists (Patel et al, 2014). Primary care nurses were trained in psychosocial interventions through an international cooperation rehabilitation program. They got involved in psychoeducational and prevention programs as well as conducting self-help groups, and following step-by-step progress of service users in the workplace, after vocational training (Loza & Sorour, 2016).

4.9 MIGRATION OF EGYPTIAN DOCTORS

Egyptian policy makers often encourage the migration of physicians, especially to higher income countries, and traditionally Arab Gulf countries. The 2013 Household International Migration Survey, found that almost 6% family members had emigrated, and around 5% are returning migrants (Farid & El-Batrawy, 2015). This supports Egypt with much needed foreign currency and provides a solution to unemployment (Zohry, 2003). In 1982, about 25% of Egypt's laborers worked abroad, where they were paid 30 times better than their homeland (Chen, 1989). In Saudi Arabia, an Egyptian doctor could make US \$1500-2000 monthly, with free accommodation and other advantages, whereas he used to get only \$50 per month by the government (Chen, 1989). In UAE, in 2007, 20.3% of the total stock of physicians working in MOHP were Egyptians (El-Jardali, et al. 2008). Saudi Arabia stands out as the leading destination for general population emigrants from Egypt by 40 percent of total emigrants (Farid & El-Batrawy, 2015). Moreover, the Minister of Health and Population reported that 60% of the Egyptian physician workforce were working in Saudi Arabia (Youssef, 2018). In addition, origin households in Egypt received remittances once in every two months of which 70% are through the formal financial system (Farid & El-Batrawy, 2015).

Egyptian doctors have long travelled in search of training and education and to better their standards of living (Loza & Sorour, 2016). For instance, Egyptian psychiatrists are moving to high-income countries where they get offers for training in mental health to compensate for shortages in health services in those countries (Patel, 2003). This acts as a powerful “pull” factor for them. More than 31% of the Arab-trained physicians in the US come from Egypt (Tekian and Boulet, 2015). Jenkins et al (2010) documents that out of 1845 US psychiatrists originating from the Eastern Mediterranean Region (EMR) in 2008, there are 382 from Egypt. In addition, 100 out of

423 EMR citizens are Egyptian psychiatrists in the UK in 2007. Moreover, the estimated ratio of psychiatrists per 100,000 population in Egypt would be 1.5 – 3 times higher, had those migrated and registered abroad continued to work in their home country. The shortage in mental health specialists in Egypt is evident through the WHO (2014) mental health atlas showing a decline from 0.91 to 0.68 psychiatrists per 100,000 in 2011 and 2014 respectively.

Restrictions to physicians' travel have been proposed in Egypt to bridge the gap of needed practitioners in the MOH. Suggestions included mandating them to pay for their medical education fees in the public universities, and compulsory percentage donations from their salaries abroad (Tarek, 2016). Ministerial decrees to end or limit the unpaid leaves were issued to urge physicians to come back to preserve their job in the MOHP (Seoudi, 2018, Doctor News Web, 2018). However, being unconstitutional to hinder their right as citizens to move freely ended such discussions (Masad, 2016). Legislations have little effect on migrants who made up their minds; putting blocks and fences failed at their task (Loza & Sorour, 2016).

Missed opportunities

On the other hand, there are other unseen consequences. Thinking about the number of doctors in Egypt who would have chosen a different specialty, had the opportunity of emigration not been available. Alternatively, more generally, how many students would pursue a medical career if they knew they would not be able to improve their opportunities through travelling and emigration?

5 CHAPTER FIVE: STUDY RESULTS

In order to get comprehensive image about the determinants of motivation of medical doctors to practice in the Egyptian MOHP, a series of focus group discussions and interviews were conducted with relevant stakeholders, based on purposeful sampling. A sample of physicians currently in practice in MOHP in primary, secondary and tertiary health facilities were brought into focus group discussions about the determinants of motivations as per the framework developed by Franco, et al 2002. Further, a group of clinicians who quitted the public sector to private sector were also investigated through focus group discussion. And migrant Egyptian doctors to Germany, UK and Maldives were also interviewed to reflect on the factors that push and pull them, as regards practice in MOHP. The triangulation of data was the objective of meeting managers in health units and hospitals affiliating to the Ministry of Health and Population, as well as key informants in the preventive sector and Egyptian medical syndicate. Questions covered the individual, organizational and cultural factors that contribute to HRH motivation. In addition, the magnitude of physician shortage problem and relevant efforts, challenges and opportunities in this context were investigated. This chapter represents the opinions and information obtained from participants after analysis and coding into relevant themes.

5.1 ANALYSIS OF FINDINGS

5.1.1 *Individual factors of motivation*

Most of the participants listed “their will to help their community” among the reasons to choose medicine as a profession. Being inspired by successful Egyptian models like Professor Magdy Yacoub, perceiving medicine as prestigious profession, and interest in human biology since

childhood were prominent answers. The ultimate goal of being clinicians ranged from alleviating pain and suffering of the patients, to innovation in health sciences. Most of the participants reported their frustration and the gap between expectation and reality. There is inevitable deviation from the noble mission they have the initial will to do.

“I thought I am taking the first steps on the way to be Magdy Yacoub, but I ended up as a general practitioner in a rural unit in Giza. I thought it is about getting the highest grades, but even students with higher ranks suffer similar challenges.” | Fresh graduate and general practitioner at a PHU- Giza, December 2018.

The organizational and cultural factors are major constraints that affect them in a way that worsens the outcomes of their efforts, and that consequently adds to their dissatisfaction. However, many participants emphasized that they still get attached to their patients and raise donations for many of them. Moreover, they feel indebted to their undergraduate medical institutions, no matter the flaws; they recognize them as their first learning point. Some participants claimed they plan to contribute to these medical schools in the future either financially or technically.

“We cannot handle the deficits of the system. Our patients are poor, we raise donations from our families and friends, but the list is just endless.” | Specialist at general hospital – Cairo, December 2018.

Migrant participants related more to their personal values, despite late exposure to clinical management as reported. Reasons lie in the collaborative team approach of providing medical care. They appreciated the role of allied personnel including nurses, patient educators, technicians and physical therapists. The approach of management looks comprehensively at the objectives of the patient, rather than medical aspect only, with recognition of the concerns of all stakeholders.

5.1.2 Organizational factors

There is general consent among the participants to the following problems regarding human resource for health in Egypt: Improper composition of team of health workforce required for health service delivery. There is lack of efficient or effective HRH policy regarding recruitment, remuneration, career development, retention, job promotion or sanctions. While physician density used to be more than nurses, midwives, qualified paramedical staff, currently physician shortage in critical specialties is striking. The geographic imbalance in distribution of human resources reduces coverage in frontier and rural areas despite the relatively higher pay that is used to motivate physicians to serve there. Few portion of physicians have the will to pursue a career in family medicine. This hinders the scaling up of the family health model. There are less popular specialties among clinicians due to association with exhausting life style and disproportionate income. Anesthesia, intensive care and emergency medicine are main examples especially with unreliable security settings. No channel of reporting about shortages is available; accordingly, there is no definite number or classification of the shortage at the level of governorates. However, at the level of primary health facilities, there are 1,252 family health facilities that suffer shortages in physicians (key informant at preventive sector in MOHP, 2018).

Career development opportunities

All the participants either physicians or managers emphasized the indispensable nature of continuous learning for clinicians. Science is always being updating, and even getting basic information about one medical or surgical specialty requires years of studying, reading and practical exercise. To gain an academic master degree is the basic step to be able to register as a specialist and start one own clinic. All participants perceive being a specialist as the start of better career alternatives. This essentially entails two steps: enrollment in a master degree in a medical

school, and gaining clinical skills through practice and senior supervision at a hospital. The first step requires the clinician, if applying individually, to get the approval of MOHP to be able to register, which is not a smooth one. There are restrictions to leaves for study and leaves for training in academic institutions. Alternatively, Physicians register for specialty residency through the ministry, after finishing the mandatory two-year (takleef) at a primary health care facility, and they can start their master's degree. Physicians serving in remote areas have the privilege to register after just six months of work. The choice of specialty is according to the needs of the hospitals within the MOHP. In the following quotations, participants reflect on their experiences throughout their way to gain a postgraduate training.

"I am wasting my time in the primary health unit. Not allowed to register for a master degree and cannot afford taking exams to qualify for practice abroad" | Fresh graduate and general practitioner at a PHU- Cairo, December 2018.

"Getting a master's degree is a routine step to be able to practice. It is not recognized abroad. It is based on memorizing and the quality of research requires reconsideration." | Internal medicine specialist at general hospital – Cairo, December 2018.

The second step –clinical training- is highly dependent on the availability of staff that are both skilled and willing to pass experience. It is a personal effort rather than an established system with clear job descriptions. Overall, physicians see that the current policies of the Ministry dampens continuing medical education. Reasons include delay in starting the process in contrast to academic entities, unstructured clinical training, and decreased capacity to accommodate qualified candidates. Moreover, some participants reported their will to pursue a postgraduate degree on their own, to avoid the Ministry obligations. However, their low pay did not grant them free choice.

“In clinical training, you learn by diffusion, even if the program has log books. It is about the mindset and the workload of the senior faculty. And this is how they learnt, so why change!”

Pediatric Resident at general hospital – Giza, December 2018.

Egyptian fellowship is another option that is gaining popularity among recent generations of physicians. It is a professional degree composed of structured clinical rotations at best performing Ministry of Health facilities and educational hospitals. Therefore, technically, it is more practical and includes more real life situations without the obligation to write a thesis at the end. There are agreements of recognition of the professional clinical training in most of the Gulf countries, and collaborations with some European educational bodies. In that sense, it is a better than academic master’s as a tool for opportunities abroad. Many participants reported their plan to use it as a passport for working in gulf later.

“Every resource is scarce, and you have to fit in, otherwise get yourself a mentor of your family. Everything in our country is through inheritance” | Surgery Resident at teaching hospital – Cairo, December 2018.

Practitioners abroad reported high costs of career advancement. However, their organizations financially and managerially support participation at scientific meetings. Regular discussions in their facilities take place and online education is encouraged. Competition is tough, but high achievers are rewarded. The path is quite clear and defined.

Work environment

Clinical practice and residency are associated with many stresses. Medical care is highly dependent on individual clinicians rather than a clinical team. This adds other duties of paramedical to the workload of the physician. There is a considerable gap in both the number and

the qualification of the allied personnel that is supposed to support the clinician, either in inpatient or outpatient departments. Inappropriate infrastructure at the hospitals makes the access to food, water difficult. In addition, the psychological stress originates from the lack of senior support at many times, due to their paucity, or they are just looking for making a living in another hospital or clinic. This leads to uncertain decisions as regards the patients, and renders the results not very promising. The following quotations exemplify the hardships they faced.

“At many times, I find myself in charge of every case. I refer to hospitals when in doubt, or consult my colleagues and more senior friends before getting back to the patients” | General practitioner at rural PHU – Giza, Cairo, 2018.

“I have weekly 24-hour shift. I come to the hospital with a suitcase for my food, clothes and blanket” | Pediatrics resident at general hospital- Cairo, December 2018.

“I used to serve as the unit manager, procurement officer, clinician and registrar.” | General practitioner in rural PHU- Giza, December 2018.

On the other hand, managers tell that there are great investments in infrastructure and equipment. There are also some agreements for renovations with private entities and charity organizations. However, many patients are used to the fact that they need to bring surgical consumables on their own. They still get the service free of charge. One manager reported that the challenge in maintenance of assets.

“Many health units and hospitals were renovated recently. The general infrastructure is satisfactory. The problem is in follow-up and maintenance.” | General Manager of general hospital – Cairo, December 2018.

The issue of hospital security was repeatedly raised because of reported incidents of violence acts against the medical team by the unsatisfied or angry relatives of patients. Reasons varied between lack of equipment, delayed response to patient condition, misunderstandings and perceived malpractice or medical negligence. However, participant physicians and managers showed frustrations, as they are threatened everyday especially at the causality and surgery departments. Managers reported the attacks they encountered to the higher level in the Ministry, but they claimed that there was no further action taken through the Ministry of interior for instance. At many occasions, they just use their mandate to close the hospital reception and close the emergency room whenever the medical team is at risk of violent acts.

Governance obstacles

A number of governance challenges exist on the legal and executive frames. There is a lack of integration for service provision, mostly due to above-mentioned imperfect combination of health workforce. Interaction between different governance bodies is barely regulated. There are many players from central to peripheral levels; the Supreme Health Council, governorate health committees, and hospital and health centers boards. Variation in job duties between same managerial posts, and fluidity of tasks make it very difficult to control corruption and private gains. Representation of medical staff in legislation committees is weak, so codes of practices are generic and do not result accountability. Moreover, regulations for health facilities are sparse between multiple laws and ministerial decrees and not set into unified code, and neither updated. Individual experience and interpretations prevail.

Accusations of medical faults are judged through a criminal perspective rather than a medical one. The lack of guidelines, deficient patient education about difference between complications and negligence, in addition to improper documentation in the majority of cases

makes it even worse. For instance, a patient can accuse the clinician for mismanagement or even organ trafficking. This puts the physician under retention until the case is investigated. Furthermore, the Ministry of Health and Population runs a clear conflict of interest being the principal service provider and the supervisor of Medical Responsibility Committee that decides upon the incident. Here, a participant recall an incident when he was investigated and remained under retention due to patient misunderstanding and misleading allegation.

“The patient was bleeding, his spleen was severely injured and we surgically removed it. After stabilization, his relatives accused us of organ trafficking, despite their initial satisfaction with our efforts! I remained under retention until the consent document appeared, and saved me.” | Emergency resident at teaching hospital – Cairo, December 2018.

Intersection with other entities is another managerial concern. For instance, other ministries like Defense, Interior, Energy and Agriculture have their own health service provision arms. Physicians working there have other regulatory codes regarding recruitment, salary scales and registration for graduate studies.

Investment in health is not an easy case to advocate for on the national level. The health sector is demanding and the lack of a concrete health insurance plan cripples the way for reform. The new health insurance law was finally adopted in 2018, and piloted in Portsaid governorate. Promising results should build on the ministry resources and open the door for successive reforms.

“In different occasions and meetings, it is confirmed that the primary healthcare has exceeded its allocated budget” | Primary health unit manager – Cairo, December 2018.

Strategic management

The general mission of the Ministry of Health and Population is not well established. It is rather a political direction influenced by the approach of the minister based on national priorities and international funds. For instance, Hepatitis C elimination, and the “100 million health” campaigns supported by different donor agencies are consuming the resources of the primary health units. Other already piloted programs that had this media attention previously are no more monitored to sustain or upscale. This applies to the maternal and child health programs. Family planning as well, but fortunately, international funds are throwing stones in still ponds. Decisions are highly centralized. The confusion about the strategic mission of the Ministry and the health priorities are also reported by managers. Fluctuations are influenced by political change in leadership, availability of donor funds for interventions, and capacity of the staff. Participants from managerial posts deny being invited to strategic planning meetings or needs assessments.

“We like many public institutions encounter vague definitions of codes of practice. There is no clear tool for follow-up, monitoring or evaluation. Decisions are variant from case to case, based on individual interpretation” | Director of PHU – Cairo, December 2018.

Recently, a ministerial decree that prevents bringing consumables from outside the health facility. Physicians interpret this move as a green light for violence against them. For example, when a patient is scheduled for a surgery that requires a deficient consumable in the hospital, they are neither given an exact date when this material will be available, nor allowed to get it on their own. Accordingly, first line staff –physicians and nurses- usually face the rage of such shortages and cramping decisions. On another hand, many participants revealed that they were investigated managerially for not complying with the formal white coat or identification card.

“For me as a manager, I cannot order the deficient medical screws myself. I need to send to the central authority that will add my request to their long waiting list. The ministry prohibits bringing such material by the patient. As per my mandate, I closed operations room till further notice”| General Manager of general hospital – Cairo, December 2018.

Such managerial insufficiencies were also reported at the level of primary health units, fresh graduates frequently serve as clinicians and managers especially during vaccination campaigns or in a response for an epidemic. This reflects on the daily service flow that witness interruptions, beside the “usual” restriction on medication choices, due to limited amount and variation of pharmaceuticals offered free of charge in primary health units or hospitals.

Physicians working in rural areas need to use more than three types of transportation to reach their facilities even in Giza governorate. Consequently, they find difficulty being punctual, that poses sanctions on their low salaries. They perceived these formalities as secondary issues that drain their energy and motivation, instead of finding radical solutions to countless bugs in the process. In the same vein, the ministerial decree for restricting the permission for the (leave without pay) to the minister herself, in response to announced shortages; participants think that it just adds to physicians’ attrition, and they will simply leave for good.

“Everyone in the hierarchy acts according to his boss order. We don’t know how these orders originate”| General practitioner and manager of a PHU – Cairo, December 2018.

“For media people, it seems really good that the Ministry prohibits bringing any consumables from outside. But did they ever ask if the Ministry would procure them? What about the waiting lists? We pay for such irrational decisions from our morale and safety”| Surgery specialist at general hospital – Cairo, December 2018.

Low pay

There is a general agreement about the unsatisfying pay for clinicians, from physicians, managers and people in policymaking positions. However, they highlighted that law does not prohibit dual practice, which provides physicians an alternative for raising their salaries. Despite recognizing this dual practice to negatively influence the public health sector, participants were neutral towards the notion of commitment to public sector only through providing decent pay. Reasons included the perceived infeasibility of this solution and the difficulty of enforcement of such regulation. Private sector is an important health service provider that the Ministry cannot compete with.

Dual practice is a normal phenomenon among the sampled doctors. The majority work in at least one private facility beside their governmental job. Some managers even advised them to commit –informally- half the time as a motive to accept work in the challenging environment, and have time to supplement their pay through private practice. The total official monthly salary including incentives does not exceed 2200 Egyptian pounds (around 123 USD, exchange rate 17.9 in 2018), and increases by not more than 300 Egyptian pounds (around 17 USD, exchange rate 17.9 in 2018) after the master’s degree. Most of the participants were not aware with the promotion or incentive schemes. They find it time consuming to exert effort analyzing them. The case is not very rosy in the private sector, neither. For instance, they can earn from 250 EGP (around 14 USD, exchange rate 17.9 in 2018) to 600 EGP (33.5 USD, exchange rate 17.9 in 2018) per 12 hours, based on qualification and specialty. Interestingly, fresh graduates reported that because of this busy work schedule, they barely have time to study or even socialize. Practitioners in teaching hospitals complained from the discrepancy between the workload and their pay. Furthermore, they reported constraints to follow the infection control and safety measures with their skimpy salaries.

The search for “quality life” is behind their plans for career development and qualifying for practicing abroad. They are pending other funding opportunities or crowdfunding from family members for instance. Despite repeated strikes, grieving in media and raising the issue, participants do not rely much on efforts by the syndicate to alleviate the sufferings of the clinicians. They rather find alternatives to adapt –temporarily- or plan to leave the public practice on the long term.

“The parliament discussed restricting private work for physicians. They are not oriented, how come a clinician can live, study and marry with those two thousands EGP! The fuzz is about the consultants’ rates. You choose to visit a consultant; you are fine with his fees. What about service providers at public facilities who cannot charge poor patients?” | Orthopedic resident at general hospital – Cairo, December 2018.

“We are sick of calling it the noble mission. Physicians cannot practice free of charge because they save lives. Instead, they should be paid high because they do so!” | Internal medicine specialist at teaching hospital – Cairo, December 2018.

The suffering because of low pay and associated burnout from being obliged to dual practice and search for complementary sources for living is highly compromising the health system performance in various means. Quality of the service in public sector, time for each patient allocated for examination and counselling, and showing up at the healthcare facility are all negatively influenced.

5.1.3 Cultural factors

There is general congruence that the service provided is not satisfying. Participants were not neutral; they rather confirmed that this deterioration contributes to their frustrations. Some of them concluded by stating that they will not be comfortable receiving treatment in public health

facilities in Egypt. The dilemma is that they are, as service providers, are accused of negligence, although they endure various sufferings to provide best possible outcomes. This hazy demarcation is further mingled with negative experiences of patients either in public hospitals, or with expensive invoices of private facilities. Patients repeatedly complain about high fees of experienced consultants. The summative result is rage against clinicians in public settings.

Health awareness is generally lacking, and the patient does not recognize the difference between emergency and clinic conditions. For instance, some patients present at emergency rooms asking for management plan to their chronic illnesses. When they are instructed to show up in the clinic, they refuse and consider this as medical negligence. Moreover, participants reported that they encountered various accusations of mistreatment due to common complications they previously consulted the patients about, especially in surgical cases. However, time constrains and logistic inappropriateness hinder patient consultation in proper way in many sessions.

Violence acts are part of the practice especially in emergency departments. Primary health units encounter such incidents as well mostly due to overcrowdings and lack of free medications. Questioning the medical or surgical procedure that the physician adopt lies behind many of the misunderstandings. There is clear issue of trust between service providers and patients. Media campaigns about organ trafficking caused considerable harm to patient doctor relationship. Such campaigns usually lack scientific evidence and create societal dialogue that blame the health care team. Many physicians are short of communication and counselling skills. Safety at hospitals is a major concern. The causality and emergency departments commonly pay for the damages resulting from assaults.

Medical profession used to be a prestigious one in the Egyptian society. However, participants showed low morale and doubted this statement. This is attributed to different factors

like the relatively long period of learning and practice until self-actualization. The Confusion between the deficient health infrastructures and doctors' performance.

“What is really noble about feeling unsafe and hiding from patients and their relatives? What is reputable of being hit after exerting exceptional efforts to save lives with scarce resources?”| Emergency specialist at teaching hospital- Cairo, December 2018.

“Life is faster than before. We cannot wait till the fifties to explore life and have social orientation”| Gynecology Resident at general hospital – Cairo, December 2018.

Many participants claimed being in the process for starting own private clinic with other partners. Others were preparing for language tests and medical exams to qualify for practice abroad. There are plenty of success stories and support groups for doctors' migration. Destinations are extended and included Germany, United Kingdom, Canada, Australia, Maldives, Brunei, and other OECD countries. Unlike the older generations, young doctors defined the quality of life as the main motive to choose other destinations than gulf countries.

“We achieve high scores in international examinations, and get decent jobs with clear regulations and codes. It requires further studying and spending. But this is our only salvage.”| Internal medicine specialist at teaching hospital – Cairo, December 2018.

“There are numerous support groups in social media and in these countries. Egyptian doctors are very supportive to and help each other to settle and perform better.”| General practitioner at PHU – Cairo, December 2018.

5.1.4 *Response to the problem*

In response to physician shortages, current and previous ministers prohibited the leaves without pay, and even leaves for study are difficult to attain. Managers are hesitant in approving leaves, and the minister herself currently regulates similar decisions.

“I have five registered clinicians in certain specialty. In fact, there is only two, because two of them are on reasoned leaves, and another one is deputed to another facility. Accordingly, I cannot claim shortage and announce openings”| General Manager of general hospital – Cairo, December 2018.

Through contracting external physicians, there is a plan to address the shortages especially on the primary level. These contracts will be based on definite shifts instead of full-time. Also, outreach campaigns to the underserved areas, as well as sending family medicine, pediatric and gynecology specialists to serve in units with shortages for two days per week. These extra duties will be paid based on the current salary scheme of the ministry. Furthermore, other alternatives like contracts with retired doctors, and obliging the family medicine specialty trainees in Egyptian fellowship to spend part of their training in less covered units are being investigated.

As a step towards supporting clinicians in their career advancement, the ministry announced that it would pay the tuition fees for graduate studies in July 2018. The ministry provides periodic trainings on communicable diseases, outbreaks and algorithms for practice. Such training targets all the healthcare team members. However, physicians are the least interested group to join. Successful organizational reforms include the family health model that served the poorest thousand villages in Egypt since 2009. There are more than 3000 primary health facilities implemented this new model, of which 2121 are fully accredited. The model provides physicians with training on common practices, simplified guidelines and interpretation of electrocardiogram

and sonograms, beside the prescription of essential drugs. Incentives for performance were clearly communicated about indicators that are linked to monthly salaries. Managers verified the results in ordinance with patient satisfaction surveys. Results were promising as regards quality measures. However, weak referral system, availability of drugs, shortage in eye and reproductive health services were challenging.

5.1.5 Consequences of demotivation and dis-satisfaction

Shifting to private sector practice

As per the data provided by the participants, same legal laws and regulations applies to private health facilities. Documentation and patient counselling can be much better. However, allegations put clinicians under retention until proven innocent or mistaken, under the supervision of the ministry of health. Salaries are better for practitioners with postgraduate certification. After residency and completing the certificate, there can be a room for better pay, because before that residents and general practitioners are very loaded to have time for dual practice. Most participants retain their governmental job, as they find it possible to do both commitments and they complement each other to have decent cumulative pay. However, they did not see conflict of interest of holding both positions. Some participants declared their resignation from the MOHP and dedication to certain private facilities, especially surgeons, anesthesia and intensive care specialists. Either due to difficulty in renewals of their “leave without pay”, or seeking less stress, clinicians prefer quitting the public practice. The work environment is much better in terms of infrastructure and equipment. Management is still challenging, in terms of goal setting, monitoring and evaluation. Most of the private health facilities lead a profit-seeking behavior, minded with service provision with no attempts for scaling up or quality assurance. The room for learning by practice is much limited than public facilities, with less chance for mentorship. Few managers

support capacity building of the team through scientific meetings, but there is no support to continuing medical education. Few facilities adopt a team-based approach; the majority are task-oriented. Cultural pressures resemble those in the public practice; rising from reciprocal reasons, but more aggravated because patients pay out of the pocket in this case. Objections about short consultation time and choice of certain medical approach are often encountered. Gratitude gestures from satisfied patients are major motive, that they feel they positively influenced the lives of their beneficiaries. At the time of interview, none of the participants was interested in consulting the public facilities, given the current scales and management codes. For the expected impact of dual practice or migration to private sector, most of the participants did not recognize harmful consequences, as it has been the case for long time. The poor class is the most vulnerable, but as service providers, they claimed they would waive their fees if needed, but not to the extent of compromising their commitments towards their families and career.

“When you quit the MOHP, you get a “Free practice certification”. It is my freedom certification! It is about getting relieved from an outdated managerial system that does not serve anybody”| Internal medicine specialist at private facility – Cairo, December 2018. (Resigned from MOHP for seven years).

“We cannot fix the gaps in the health system. We just want to survive to be able to serve poor patients. Otherwise, we will join them”| General practitioner at private facility – Cairo, December 2018. (Dual practitioner for two years).

Migration

“We witness a wave of Egyptian doctors’ migration” | Secretary General of medical syndicate- Cairo, December 2018.

Such declaration is a serious alarm about the trend of migration rising among Egyptian doctors, especially young ones. Destinations are quite different from previous generations who preferred Gulf countries as presented in the literature earlier. Organizational factors constitute the main attraction to clinicians migrating not only to OECD countries, but also in new destinations such as Maldives and Brunei. Interviewees practicing in UK, and Germany appreciated having well-defined codes and regulations as a source for professional security. Clear policies for communication, feedback, payment, job promotion, complaints, continuing education and career advancement are published and communicated to the healthcare team. The concept of integrated team for service provision leads the structure of healthcare. The physician duties make them busy all the time, however, qualified assistant personnel in the form of triage nurses, specialist nurses, patient counselors, pharmacists and patient educators guarantee an organized flow. The organization of health facilities into primary, secondary and tertiary centers creates awareness among the patients about the expected service at each point. Patients usually deal with their family doctor, and they are usually informed about the wait time, and the possibility of not seeing a doctor, and just being managed by a senior nurse. Security of the hospitals and health units is a major relieving factor. Accordingly, it is less likely to witness violence acts, and when encountered, they are professionally handled. The priority of managers – who usually do not belong to medical background-, is to bring the best out of the team. For instance, there is assistantship to improve language in Germany, to speed up the process of better communication with the new migrating physicians. Doctors do not need to prove their time of attendance or departure from work. They document their overtime and their chief approves. However, in the UK, case documentation is part of the physician's load.

Most of the health services in Europe are provided free of charge in primary, secondary or tertiary levels. Taxes are high and some political players are against the increased expenditure on health and education. However, patients are empowered voters and have a powerful say about that. Health facilities are generally well equipped, friendly to patients with difficulties and provides smart dormitories for health team during their shifts. Physicians are highly paid to preserve their commitment to the health facility and procure single source of income for all their expenses. Interestingly, there is no discrepancy in salaries based on nationality. However, there are certain eligibility criteria for some positions that require certain nationalities.

Reflecting on career development, clinical departments are based on mentorship, scientific discussions on daily basis. There is mutual trust between residents and consultants. In training jobs in UK, there is an allocated budget to support physicians take certain courses in their specialty. This budget is less for service jobs. In Germany, hospitals support relevant trainings in specialty and representation in scientific meetings. Preparatory sessions for certifications are also held. Despite their high salaries, health facilities finance the career advancement opportunities, because it is a long-term investment. An interviewee concluded by the fact that these countries experience clinician shortage and they want to address the gap with cost effective measures, because medical education is expensive, and medical profession is hectic by nature.

In less developed countries like Maldives, it is stunning to find the above-mentioned organizational factors highlighted by participants. Adding the fact that majority of population there are Muslims, this brings familiarity with most of the Egyptian migrants. The gap there is mainly in primary health sector, it does not require qualifying tests to practice in Maldives. To hold a specialty, they require a postgraduate certification. Salaries are satisfying because living expenses are very affordable, and physicians earn 1300 – 3000 \$ per month according to the workload and

qualifications. Educational facilities and leisure activities makes it favorable for young doctors with small families. Career development is very deficient. However, short-term courses at neighboring India is very doable. Unlike older generations of doctors in Gulf countries, this destination is becoming less popular due to constrains related to sponsorship (Kafala) system and less equitable policies and strategies. Moreover, many Arab countries require qualifying examinations for the Egyptian master's degree, and UAE and Qatar run special exams or completed steps of the United States licensing examination.

“The myth that you have to exert super exceptional effort for the staff to give you a chance to learn is totally unaccepted here. Everyone has a chance, they provide a humane environment and they appreciate hard workers”| Egyptian orthopedic resident - Germany, December 2018.

“There is a major deficiency in emergency physicians. However, cases are meticulously checked to prioritize. We inform the patient about wait time and other possible alternatives. We have the same goal for making everyone feel better.”| Egyptian plastic surgery resident – UK, December 2018.

“Codes that prohibit discrimination, harassment and channels for communication are clear and functioning.”| Egyptian plastic surgery resident – UK, December 2018

“People here are very kind. There is no discrimination based on your nationality or religion. They appreciate doctors.”| Egyptian general practitioner – Maldives, December 2018

“I left all the stress behind, and came here to have some time to study, and get a Decemberent pay to do qualifying tests in Europe”| Egyptian general practitioner – Maldives, December 2018

5.1.6 Medical syndicate perspective

The shortage in physicians is a chronic problem in Egypt. Medical schools have never supplied sufficient numbers of graduates to cover the Egyptian population. In addition, the migration wave to the gulf countries, Libya and Iraq started in the seventies, following the open-door strategies. The discrepancy between the incomes of doctors in Egypt and these countries was the major motive for them to leave. This trend continued 60 percent of Egyptian physicians are working in Saudi Arabia, according to the Secretary General of the medical syndicate. The work environment and regulations are other influencers. Defined job description, duties and rights contribute to favorable conditions that are insufficient in their home country. Based on syndicate advocate, the infection allowance was designed to be 100% of the physician salary. Since the sixties, this allowance did not update, and stopped at 19 EGP. Despite adjudication, the ministry of health and finance did not implement. They rather opposed it. The final court decision was a need for a law approved by the parliament. The syndicate started a project and is advocating for it through community dialogue and stakeholder engagement.

This repelling environment as described by syndicate advocates led to increased wave of resignations among younger generations of clinicians. In 2016, 1044 doctors quitted practice from MOHP, followed by 2049 in 2017 and 2397 in 2018. In three years, the ministry of health lost more than five thousands clinicians that constitute around five percent of its workforce that is estimated to be 103337 as announced by CAPMAS in 2016. The escape from practice in Egypt is not exclusive to MOHP facilities only, but extended to academic institutions that medical graduates used to compete to reserve a place there. For instance, the last call for residency in AinShams University announced fifty places in anesthesia specialty, and only nine positions were taken. Many fresh graduates prefer studying and qualifying for practice in western countries,

instead of accepting previously known prestigious positions in Egypt. The ministry of health recognized this progressive leak of doctors at different occasions. However, it is barely addressed through policies and strategies. Such approach paves the road for privatization of public facilities, as part of the general reduction on expenditure on health from the national budget. The syndicate moves through the recommendations of its general assembly. However, numerous concerns are raised about the freedom of expression and the ability to call for strikes like successful ones in 2011, as reported by key informant in EMS. Moreover, this complicated situation is quite similar to other countries like Algeria, Sudan, and Jordan. Even in UK and Germany, doctors led strikes where they washed cars to grasp society attention. Another critique to the general vision of the MOHP is being driven by international donor agenda. For instance, investments in the primary health level has long been encouraged by the WHO, USAID and the World Bank to improve health indicators. Nevertheless, what about secondary and tertiary services that serve the most marginalized portion of the population. Improving these tiers require collaboration between the ministries of health and higher education to design competent training programs. In fact, more than 20,000 clinician are unable to register for their postgraduate degree and they are not free to decide upon their specialty, as declared by key informant in EMS. There is flounders in regulations to continuing medical education and professional licensing.

The first step advised by the syndicate is to reflect the will to reform through increasing health expenditure. Investment in health and education through raising government expenditure on health is the real test. There can be a chance for improving the circumstances of physicians and health facilities if the real expenditure reached the three percent stated in the constitution. Targeted tax and inclusive insurance law can significantly relieve many of the current challenges.

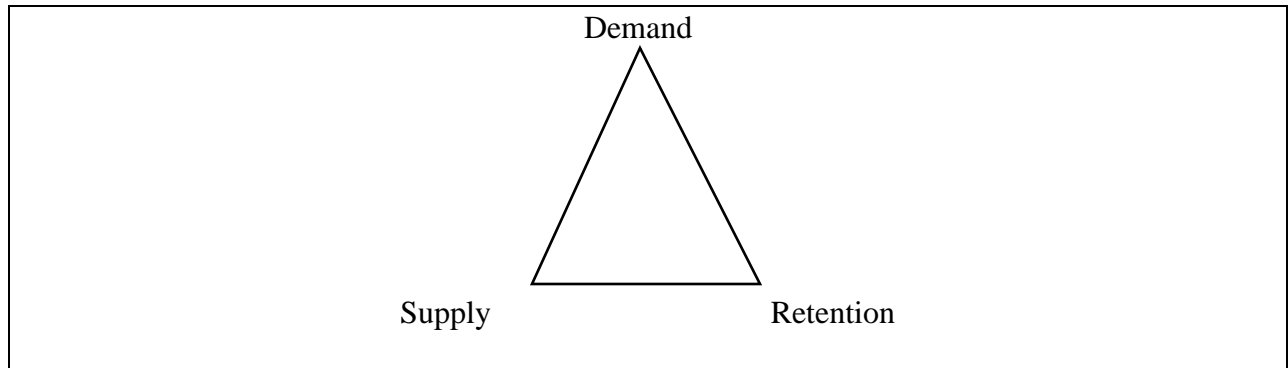
“A comprehensive reform plan to health sector should start with taming the capitalist approach in dealing with people welfare. Increasing government expenditure is the borderline. Otherwise, it is some fuzz for the media.”| Member of medical syndicate council – Cairo, December 2018.

“Currently, we advocate for the medical responsibility law, but each time we propose a project, it ends up with distorted version. We definitely oppose the new medical insurance law and the regulation of university hospitals law. They are the initial steps for cancelling free medical service and destroying medical education. They are against the poor patients.”| Member of medical syndicate council – Cairo, December 2018.

5.2 CONCLUSION

“Physicians in public sector” is a trilemma between demand, capacity and retention. The mismatch between demand and supply creates a shortage problem. There should be reconceptualization to the role of primary health units to provide preventive and comprehensive primary care. In that sense, secondary and tertiary centers will suffer less squandering of resources. First, defining the needs is a messy step that needs reevaluation. Preparing the graduates to fulfill the community should induce revolutionary changes to medical curricula. The mismatch between supply and retention is primarily organizational. As a part of the national vision of the country, reform laws and strategies that assure the marginalized and reward the conscientious should be adopted and implemented based on new public management rather than bureaucratic means. The mismatch between retention and demand is the phase that this paper alarms about its repercussions. The leak of clinicians already familiarized with the system despite flaws is a real threat to an exhausted health system.

Figure 7 Trilemma of "physicians in public sector"



Source: Author.

Policy implications are through three main themes: addressing the demands of the community through medical education and training opportunities, addressing the supply of physicians through working on determinants of motivation to practice in government and retention strategies as part of comprehensive reform to health system.

5.3 DISCUSSION

Figure 8 Different spheres for setting policies for HRH



Source: George A, Scott K, Govender V, editors. *Health policy and systems research reader on human resources for health*. Geneva: World Health Organization; 2017. Licence: CC BY-NC-SA 3.0 IGO.

Managing human resources in health encompasses heterogeneous spheres from variant disciplines (Sheikh et al., 2014). For a people-centered policy, there should be efficient integration between competencies with balance of authorities. The role of government should be revisited and analyzed in alliance with other informal players, market powers and community needs. Social dialogue, transparency and accountability measures are critical. Figure seven gives glimpse about diverse contexts for human resources in health. With reinventing the role of government, to focus on policies and regulation instead of being the regulator, provider and supervisor of healthcare. Collaboration with civil society to monitor and evaluate the impacts of certain policies and strategies can be a key for a common ground to produce sustainable equity promoting policies. Furthermore, there should be a shift from policy-making by the elite to comprise people who will

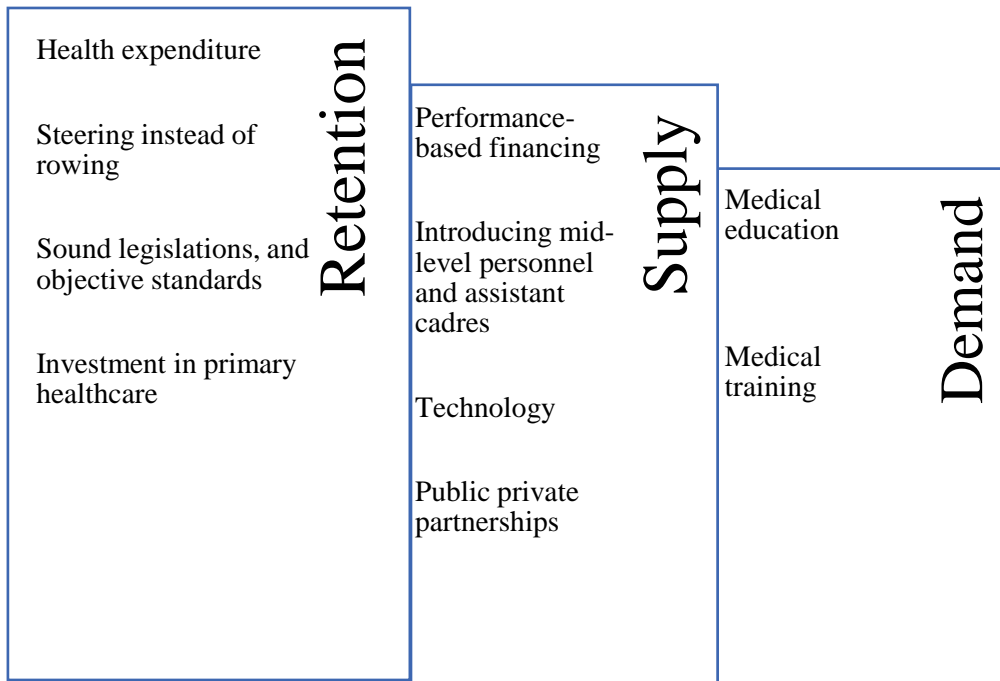
implement and benefit from these policies. In that sense, a wider space for civil society organizations is required to takeover responsibilities of recruitment, training and case studying. This fits in with broader social policies that endorse decentralization and welfare economy. Decentralization is not a panacea by default. It is pending and contingent local capacities, design of policies and supportive environment.

As part of the broader social policy and thinking about the welfare of the community, health and education are crucial components. It is worth looking at the current situation of the health system while learning the lessons from the education system. There are many similarities between health and education; being basic rights for citizens that require generous expenditure and this is very challenging in a low-middle income country like Egypt. Their critical dependence on human resources for delivering quality service and their impact on equity and empowerment of the beneficiaries make them very sensitive issues. However, keeping the slogan of free basic education and free basic health services does not really means they are provided free of charge. For instance, supplementary expenditure in the form of private tutoring is commonly encountered to facilitate success in school (Assaad and Kraff, 2015). Similarly, families pay out of their pocket to cover more than 50 percent of their health needs (World bank, 2015). Performance based financing for educational services has also been extensively discussed in the literature, just like improving the payments for health workforce. Both share the importance of careful design and implementation. Accordingly, when arguing that the fate of the deterioration of the conditions of the health workforce is resembling the outcome in education field. Private providers will take the upper hand, with more disparities and inequalities for the less fortunate.

6 CHAPTER SIX: POLICY CONCLUSIONS AND IMPLICATIONS

For sound public policies for HRH, there should be series of measures to adapt to the problem, and others to mitigate it. Adaptation include addressing the supply and demand of physicians in public sector. Success stories that allowed changes to resource availability, rational human resource management and efficient governmental role provide evidence-based policy recommendations in this context (George, et al, 2017). Addressing retention policies are of more long-term plan that affects the composition of the health team, codes for practice and framework for health service delivery.

Figure 9 Policy implications for Physicians in public sector



Source: Author

6.1 ADDRESSING DEMAND

6.1.1 *Medical education*

Because performance in real settings is much more than performance in undergraduate years, policy makers should consider changing the context. There should be a consideration to Shift from the long followed French model in Egyptian medical schools to cut the undergraduate medical education, and incorporate more “from real practice” modules. Reducing the time for undergraduate studies will not only optimize the use of limited resources, but also, will allow them to rationally spend their time for their future specialty through post graduate professional trainings or studies. Eight out of twenty-seven medical schools in Egypt have introduced these cuts and changes in the approach (Abdelaziz et al, 2018). Teaching should be more relevant to community needs and the common practices they will encounter rather than complex procedures that they can explore further through their specialty education. This way, they will be exposed to practice earlier, and they will fit with the gaps in services. Getting to a unified system for medical education will guarantee quality graduates who fit in with their community needs. Working on family medicine and general practice to be more appealing to graduates should go in the same line of innovation in medical education. Through introducing short courses and diplomas that qualify them to conduct the primary care for different segments in the society.

6.1.2 *Medical training*

Investment in infrastructure and enhancing the capacities of hospitals to accommodate candidates for the Egyptian fellowship is a priority. Considering the feedback of graduates regarding its structure will foster the training quality. Well-defined learning objectives, teaching strategies and competencies will provide high quality clinicians able to serve in primary, secondary and tertiary centers. A single recognition body responsible for licensing, monitoring and evaluation

of practice is essential for regulation of health workforce. Integration of medical ethics, medical responsibility law and codes of conduct in the training modules will make practical steps towards bridging gaps in cultural and organizational factors. Providing organizational and financial support to clinicians to advance their career is necessary. Public private partnerships can facilitate such step. This single regulatory entity should coordinate the needs of the MOHP facilities with the capacities of the Ministry of higher education. Problems such as mismatch between the teaching resources and the number of candidates for postgraduate certification will be considered during distribution of slots. Collaboration agreements between institutes can bridge some gaps. Designing compatible programs with clinicians' needs and convenience can enhance their performance. The issue of quality will be more than just paper work to fulfill or standards to put.

6.2 ADDRESSING SUPPLY

6.2.1 Performance-based health finance

Being radically different from bureaucratic health system, performance based finance gives organizational health units the autonomy to make decisions that are market driven. Health units do not go through the hierarchical relationships to plan their resources. There are rather regulatory codes that define roles and procedures, with wider margin for innovation and community based solutions. Health workers are contracted and they are paid based on the outcomes instead of processes. Well-defined job descriptions, transparent financial schemes, clear community channels between team members and equipped facilities should precede starting the PBF model. The model will not evaluate individual performance, but the sum of the integrated efforts of the health workforce, administrative staff and regulatory entities. This is a practical way for monitoring and evaluation the reform towards health indices. PBF is not only about monetary incentive, it has

direct positive influence on the internal and external elements of health workforce (Dale, 2014; Chaumont, et al, 2015). Fikry, et al (2015) proves the success of PBF in family health centers in Qena to improve the knowledge and performance of nurses. PBF model usually start as pilot and then get adoption as national policy after evidence of success.

6.2.2 Technology and telehealth

Health workforce should benefit from advancements in technology that saves time and effort. Telehealth can mitigate geographical imbalance in physician distribution. A well-functioning network of consultants that advice specialists and residents in remote areas can bridge the deficit in senior coverage, decrease wait time and allow for decisions that are more competent. Information about available intensive care beds, certain equipment, types of investigations should be announced and accessible to healthcare team through continuously updating server to expedite referrals, eliminate corruption, and empower patients. Medical records are crucial element that eases the work of physician, limits confusion about patient history, provides data for medical research and facilitates administrative management. The cost for using technology in reforming health system is outweighed by the benefits mentioned-above. Although telemedicine showed to be efficient as reported earlier by the Association of American Medical colleges in 2018, several considerations should be highlighted for the experience to succeed. Government support, doctors support and patient familiarity with the concept are areas to fulfill before piloting such initiatives. Implementation research should be carried out to evaluate the whole issue.

6.2.3 Introducing assistant cadres and mid-level personnel

The practice of physician assistant programs that provide core training for three to four years with specific focus in medical specialties is widely accepted in developing and developed countries (Legler et al. 2005; Lo, 2005). Indeed, it fits more with countries with limited capacities

to establish more medical schools and teaching facilities. This allied cadre can provide the basic tasks that physicians do not feel satisfied or stimulated while conducting. For instance, advanced practice nurses, physician assistants, nurse practitioners, behavioral health specialists, health educators, and care coordinators, can provide evidence-based screening, counseling, and preventive care, logistic support, writing notes, refilling prescriptions, and patient flow. This will leave physicians to do only medicine. They will have more time to manage diagnostic challenges and complex medical issues. A multidisciplinary team rather a physician-centered approach, can leverage physician time and skills and capitalize on their impact on health outcomes.

A sensitized community about the role of mid-level personnel, education about why and when to see a physician assistant and the qualifications of these cadres are prerequisites for the success of this model. Otherwise, we will face ghost jobs and more underutilized service with extra burden on physicians.

This approach allows tasks that do not need a medical doctor to be carried out by less trained cadre. Physicians will have more time to do what they love: work on challenging conundrums and innovate in care plans and tackle the concerns of their patients. When physician time is reserved for high-level functions, outcomes will be satisfying and motivating.

6.2.4 Public-private partnerships

In the settings of a low-middle income country, like Egypt, the paucity of resources hinders many interventions to study and implement. However, with the rise of market-based economy and encouragement of entrepreneurial initiatives, civil society organizations and private sector can catalyze the design of clinical training, help in financing the postgraduate studies, build the strategic capacities of public health facilities and personnel as well monitor and evaluate the progress towards missions of organizations. Success stories from pilot projects adopting extensive

training, revised curricula, published medical protocols and service standards, upgraded facilities, as well as successful community outreach and media campaigns had led to halving the maternal mortality in Egypt between 1992-2002 (Mansour et al., 2010). Regulations to quality, pricing and health system governance should be relevant to context and promote social equity.

Infrastructure and equipment is another area of collaboration. Contracts for renovation with private and civil society organizations are on the agenda of the MOHP. However, objective assessment of needs and prioritization should take place first to guarantee healthy spending.

6.3 ADDRESSING RETENTION

6.3.1 Government expenditure on health

Abidance by the Egyptian constitution to allocate at least three percent of national budget to health sector can alleviate the excessive deterioration in the infrastructure and equipment in health units and hospitals. Reaching this percentage means double the current expenses. Citizen awareness and empowerment entitles them to hold their representatives in parliament accountable for law enforcement. Advocates from civil society and medial syndicate cannot drive this change without active political parties and members in the parliament who are concerned with rights of people. Building the case for business investment should encourage public private partnerships that should aid in the progress towards efficient management. Human resources for health should be granted salaries that secure their commitments towards decent living expenses and career advancement. This way they can dedicate their effort and time to their facilities without the need to double or triple practice. Moreover, this can be a reason for upholding their positions at least for fresh graduates as general practitioners in primary health units, instead of migration plans that provide very attractive packages. Targeted tax can be an alternative for raising funds. Encouraging

firms to engage in health reforms through their corporate social responsibility is another opportunity. International donor support is also a door that can be explored. However, outcomes are contingent concrete accountability and transparency measures.

6.3.2 Steering instead of rowing

Several conflicts of interests and managerial deficits originated from the branching role of the Ministry of Health and Population as service provider, regulator, supervisor and governor. The first step to work on the “push” factors is to separate these roles and assign the policymaking and regulations to the ministry. This entails inclusive stakeholder participation in shaping the vision and mission of the health sector. Community dialogue about health insurance, medical training and university hospitals, and medical responsibility laws will assuage many knotty pivotal issues in the management of human resources for health.

On another hand, decentralization and assigning service provision to local authorities under certain regulations should provide community-tailored solutions. Financial decentralization is necessary for real autonomy and better efficiency. The aim is to generate relevant business models that allow for decent pay for personnel and free of charge services in a proficient managerial environment. Slow careful steps through piloting can generate evidence from the field and lessons for modifications and adaptive tunings. This is not essentially a call for privatization. It is instead an evidence-based tool to reform the management to cover health needs and make full use of widely distributed network of health units and hospitals.

An independent regulatory body that monitors the healthcare quality, abidance by law, and malpractice should take over the responsibility of supervision, to avoid conflict of interests. Representatives from the MOHP, medical syndicate, training entities, ministry of higher education, ministry of justice should participate in setting the strategy for such body.

6.3.3 Sound legislations and objective standards

Human resource for health should be a separate task inside the MOHP. Such unit should manage and work on the legislation dilemmas like the law of medical responsibility, producing guidelines for conditions of employment, professional standards, amendments to current licensing system and accreditation. Employment law and rules for civil service within the MOHP should follow fastidious analysis to address geographic and team imbalances, with paying attention to the welfare of the HRH. A competent Health Management Information System (HMIS) that generate reliable data about the figures and distribution of health workforce, medical conditions, and health economics should support planning, management and decision-making in all the fields of work in the MOHP.

6.3.4 Investment in primary healthcare

The ultimate goal of a health system is to ensure that people are adequately covered by high quality health care with trusted health workers and access to comprehensive services either preventive or curative. Evidence has shown that improving primary healthcare can greatly enhance all these aspects of a health system (WHO, 2008). Through the network of primary units, that comprises of more than 5000 health unit across Egypt (MOHP, 2018), there is great accessibility to service that addresses inequalities between urban and rural areas for example. These units as a first entry point should deliver comprehensive services to meet the various presentations of patients to either manage or refer correctly, so as not to miss the opportunity of preventive measures or health promotion to reduce the unnecessary usage of specialized secondary or tertiary centers (Bindman et al, 1996). Driven by the customer needs, the primary health care model empowers patients to make decisions about their conditions and takes their satisfaction as a crucial element (WHO, 2008). Moreover, a competent primary structure can detect and stop

disease epidemics and outbreaks. In Egypt, most of the public health measures that affect the country performance as regards the health indicators are delivered through primary system (MOHP, 2018). Accordingly, there is a great potential to integrate more services to benefit from the infrastructure and achieve better coverage in a cost effective way. To reach this point, there should be investments in health workforce as they are the integral part of implementation of this model of care. Training opportunities and career development in the field of family medicine and general practice will encourage more fresh graduates to pursue these choices. A clearly organized model that is team based will enhance physician performance, satisfaction and retention.

Finally, the topic of physician retention in government is a reflection of the health policies adopted in a country. The supreme purpose of the public health sector is to secure the right to health for all the citizens, especially the least fortunate. Measures to ensure social justice and quality service to this category of citizens should be taken not only in public sector. private settings as well should be monitored because Egyptians receive more than fifty percent of their health needs through the private sector. Physicians practicing in both sectors commonly face pickles related to work conditions, career advancement and cultural understanding. Underprivileged patients pay the bill for such “push” factors, especially with not only having the service unaffordable for them, instead it is at risk of being not available with the trend of doctors’ migration, as mentioned before. More research is needed to pilot possible interventions to assuage those repressions. However, transparency, accountability and stakeholders’ engagement are the forefront for any reform to make a positive change.

7 REFERENCES

- A. Atlam, Salwa (2018). Burnout Syndrome: Determinants and Predictors among Medical Students of Tanta University, Egypt. *The Egyptian Journal of Community Medicine*, 36(1).
- Abdalla, M. E., & Suliman, R. A. (2013). Overview of medical schools in the Eastern Mediterranean Region of the World Health Organization. *Eastern Mediterranean Health Journal*, 19(12).
- Abdelaziz, A., Kassab, S. E., Abdelnasser, A., & Hosny, S. (2018). Medical Education in Egypt: Historical Background, Current Status, and Challenges. *Health Professions Education*.
- Abdel-Rahman, A. G., Meky, F., Halim, A. W. E. A., & Allam, M. F. (2008). Low job satisfaction among physicians in Egypt. *TAF Preventive Medicine Bulletin*, 7(2), 91-96.
- Abdel-Salam, Doaa M., Abdallah Mohamed A., Sayed, Wafaa S. and Ismail, Nadia A. (2015). Job Satisfaction among Resident Doctors at Assiut University Hospitals, Egypt. *National Journal of Research in Community Medicine*, 4 (2).
- Abdo, S. A. M., El-Sallamy, R. M., El-Sherbiny, A. A. M., & Kabbash, I. A. (2015). Burnout among physicians and nursing staff working in the emergency hospital of Tanta University, Egypt. *Eastern Mediterranean Health Journal*, 21(12).
- Agyepong, I. A., Anafi, P., Asiamah, E., Ansah, E. K., Ashon, D. A., & Narh-Dometey, C. (2004). Health worker (internal customer) satisfaction and motivation in the public sector in Ghana. *The International journal of health planning and management*, 19(4), 319-336.
- Ahmed, S. M., Evans, T. G., Standing, H., & Mahmud, S. (2013). Harnessing pluralism for better health in Bangladesh. *The Lancet*, 382(9906), 1746-1755.
- Al Shobaky, A. (2004). Niqabat Al Atebaa (The Egyptian Medical Syndicate), Markaz AlAhram Lil Derasat Al Seyasia wa Al Estrategia (Al Ahram Center for Political and Strategic Studies), Cairo, Egypt.
- Al Tehewy, M., Salem, B., Habil, I., & El Okda, S. (2009). Evaluation of accreditation program in non-governmental organizations' health units in Egypt: short-term outcomes. *International Journal for Quality in Health Care*, 21(3), 183-189.
- Al-Eisa, I. S., Al-Mutar, M. S., & Al-Abduljalil, H. K. (2005). Job satisfaction of primary health care physicians at capital health region, Kuwait. *Middle East J Fam Med*, 3(3).
- Alhassan, R. K., Spieker, N., van Ostenberg, P., Ogink, A., Nketiah-Amponsah, E., & de Wit, T. F. R. (2013). Association between health worker motivation and healthcare quality efforts in Ghana. *Human Resources for Health*, 11(1), 37.
- Ali, M. (2014). Egypt doctors continue strike over minimum wage. *Ahram online*. Retrieved from <http://english.ahram.org.eg/NewsContent/1/64/21254/Egypt/Politics-/Egypt-doctors-continue-strike-over-minimum-wage.aspx>
- AlKot, M. M., Gouda, M. A., KhalafAllah, M. T., Zahran, M. S., Kallaf, M. M., & Zayed, A. M. (2015). Family medicine in Egypt from medical students' perspective: a nationwide

- survey. *Teaching and Learning in Medicine*, 27(3), 264-273.
- Amiri, M., Khosravi, A., & Mokhtari, A. A. (2010). Job satisfaction and its influential factors. *Journal of Research in Health Sciences*, 10(1), 42-46.
- Ansah, E. E. (2002). Theorizing the brain drain. *African Issues*, 30(1), 21-24.
- Arab, M., Pourreza, A., Akbari, F., Ramesh, N., & Aghlmand, S. (2007). Job satisfaction on primary health care providers in the rural settings. *Iranian Journal of Public Health*, 36(3), 64-70.
- Association of American Medical Colleges. (2018). The Complexities of Physician Supply and Demand: Projections from 2016 to 2030. Retrieved from https://aamc-black.global.ssl.fastly.net/production/media/filer_public/85/d7/85d7b689-f417-4ef0-97fb-ecc129836829/aamc_2018_workforce_projections_update_april_11_2018.pdf
- Astor, A., Akhtar, T., Matallana, M. A., Muthuswamy, V., Olowu, F. A., Tallo, V., & Lie, R. K. (2005). Physician migration: views from professionals in Colombia, Nigeria, India, Pakistan and the Philippines. *Social Science & Medicine*, 61(12), 2492-2500.
- Babbie, E. R. (2013). *The Basics of Social Research*. Cengage Learning.
- Bandura, A. (1986). *Social foundation of thought and action: A social-cognitive view*. Englewood Cliffs.
- Bärnighausen, T & David. E. Bloom. (2011). The global health workforce. in Sherry Glied and Peter C. Smith (eds.), *Oxford Handbook of Health Economics* (pp. 486-519). Oxford: Oxford University Press.
- Bawakid, K., Abdulrashid, O., Mandoura, N., Shah, H. B. U., Ibrahim, A., Akkad, N. M., & Mufti, F. (2017). Burnout of Physicians Working in Primary Health Care Centers under Ministry of Health Jeddah, Saudi Arabia. *Cureus*, 9(11).
- Bindman, A. B., Grumbach, K., Osmond, D., Vranizan, K., & Stewart, A. L. (1996). Primary care and receipt of preventive services. *Journal of General Internal Medicine*, 11(5), 269-276.
- Bodur, S. (2002). Job satisfaction of health care staff employed at health centres in Turkey. *Occupational medicine*, 52(6), 353-355.
- Busogoro, J. F., & Beith, A. (2010). Pay for Performance for improved health in Burundi. *Health Systems*, 2020.
- Cawley, J.F., & Hooker, R.S. (2003). Physician assistants: the US experience. *The Journal of Health Services Research and Policy*, (8)67–68.
- Chandler, C. I., Chonya, S., Mtei, F., Reyburn, H., & Whitty, C. J. (2009). Motivation, money and respect: a mixed-method study of Tanzanian non-physician clinicians. *Social Science & Medicine*, 68(11), 2078-2088.
- Charbel, J. (2011). Doctors begin open-ended strike for better conditions. *Egypt Independent*.

- Retrieved from <http://www.egyptindependent.com/news/doctors-begin-open-ended-strike-better-conditions>
- Chaumont, C., Muhorane, C., Moreira-Burgos, I., Juma, N., & Avila-Burgos, L. (2015). Maternal and reproductive health financing in Burundi: public-sector contribution levels and trends from 2010 to 2012. *BMC health services research*, 15(1), 446.
- Chen, C.L. (1989). The immigration policies of developed countries and the "brain drain" from developing countries. In: The impact of international migration on developing countries, edited by Reginald Appleyard. Paris, France, OECD Publications, 213-6.
- Chen, L., Evans, T., Anand, S., Boufford, J. I., Brown, H., Chowdhury, M., & Fee, E. (2004). Human resources for health: overcoming the crisis. *The Lancet*, 364(9449), 1984-1990.
- Daily News Egypt. (2018a). 4 health ministry employees on trial over negligence which led to doctor's death. *Daily News Egypt*. Retrieved from <https://dailynewssegypt.com/2018/11/06/4-health-ministry-employees-on-trial-over-negligence-which-led-to-doctors-death/>
- Daily News Egypt. (2018b). Doctors Syndicate to continue legal dispute over infection allowances. *Daily News Egypt*. Retrieved from <https://dailynewssegypt.com/2018/08/04/doctors-syndicate-to-continue-legal-dispute-over-infection-allowances/>
- Dale, E. (2014). Performance-based payment, provider motivation and quality of care in Afghanistan. (Doctoral dissertation).
- Del Hierro, G. S., Remmen, R., Verhoeven, V., Van Royen, P., & Hendrickx, K. (2014). Are recent graduates enough prepared to perform obstetric skills in their rural and compulsory year? A study from Ecuador. *BMJ Open*, 4(7), e005759.
- Delobelle, P., Rawlinson, J. L., Ntuli, S., Malatsi, I., Decock, R., & Depoorter, A. M. (2011). Job satisfaction and turnover intent of primary healthcare nurses in rural South Africa: a questionnaire survey. *Journal of Advanced Nursing*, 67(2), 371-383.
- Dieleman, J. L., Templin, T., Sadat, N., Reidy, P., Chapin, A., Foreman, K., ... & Kurowski, C. (2016). National spending on health by source for 184 countries between 2013 and 2040. *The Lancet*, 387(10037), 2521-2535.
- Dieleman, M., Gerretsen, B., & van der Wilt, G. J. (2009). Human resource management interventions to improve health workers' performance in low and middle income countries: a realist review. *Health Research Policy and Systems*, 7(1), 7.
- Dill, M. J., Pankow, S., Erikson, C., & Shipman, S. (2013). Survey shows consumers open to a greater role for physician assistants and nurse practitioners. *Health Affairs*, 32(6), 1135-1142.
- Doctor News Web. (2018). Prime Minister and Minister of Health: Non-renewal of doctors' vacations to solve the shortage. *Doctor News Web*. Retrieved from <https://goo.gl/jdL6gS>
- Doctor News Web. (2018). For the first time, residencies in Ain Shams, no one registered. *Doctor News Web*. Retrieved from <https://goo.gl/jdL6gS>
- Egypt constitution. (2014). Egypt's Constitution of 2014. Retrieved from https://www.constituteproject.org/constitution/Egypt_2014.pdf

- Egypt National Vision. (2018). Egypt National Vision 2030. Retrieved from http://arabdevelopmentportal.com/sites/default/files/publication/sds_egypt_vision_2030.pdf
- Egyptian Medical Syndicate (EMS). (2017a). (Takleef) doctors refuse the MOHP conditions and strike. Retrieved from http://www.ems.org.eg/our_news/details/4800
- Egyptian Medical Syndicate (EMS). (2017b). Final verdict on the detention of the police officers of Al-Matareya. Retrieved from http://www.ems.org.eg/our_news/details/4704
- El-Gabaly H. (2007). Health sector reform in Egypt: success stories and challenges. Retrieved from http://www.globalhealth.org/images/pdf/events/112607_egypt.pdf
- ElSaadany, R. (2017). Mona Mena: Egypt is an expelling country for doctors, and 500 hospitals threatened with closure and sale (dialogue). *Tahrir News*. Retrieved from <https://goo.gl/B9jJSf>
- El-Saharty, S., Antos, J., Afifi, N. H., & Schieber, G. (2004). Egypt's health sector reform and financing review. *Washington, DC: The World Bank*.
- Evans, T., & Soucat, A. (2015). Economic, demographic, and epidemiological transitions and the future of health labor markets. *Global Health Workforce Alliance, Working Group Paper*.
- Farid, S. & El-Batrawy, R. (2015). Egypt-HIMS: Egypt Household International Migration Survey 2013. Main Findings and Key Indicators. Central Agency for Public Mobilization and Statistics, Arab Republic of Egypt.
- 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*(1), 30.
- Fellowship of Egyptian Board (FEB). (2018). Cairo: Committee of the Egyptian Fellowship. Retrieved from <http://www.egyfellow.mohealth.gov.eg/index.aspx>
- Fogarty, L., Kim, Y. M., Juon, H. S., Tappis, H., Noh, J. W., Zainullah, P., & Rozario, A. (2014). Job satisfaction and retention of health-care providers in Afghanistan and Malawi. *Human Resources for Health, 12*(1), 11.
- Fox, S., Witter, S., Wylde, E., Mafuta, E., & Lievens, T. (2013). Paying health workers for performance in a fragmented, fragile state: reflections from Katanga Province, Democratic Republic of Congo. *Health Policy and Planning, 29*(1), 96-105.
- Franco, L. M., Bennett, S., Kanfer, R., & Stubblebine, P. (2000). Health worker motivation in Jordan and Georgia: a synthesis of results. *Major Applied Research, 5*.
- Franco, L. M., Bennett, S., & Kanfer, R. (2002). Health sector reform and public sector health worker motivation: a conceptual framework. *Social science and medicine, 2002 Apr;54*(8):1255-66.
- Gagné, M., & Deci, E. L. (2005). Self-determination theory and work motivation. *Journal of Organizational Behavior, 26*(4), 331-362.
- Gaumer, G. L., El-Beih, W., & Fouad, S. (1999). Health Workforce Rationalization Plan for Egypt.

- Partnerships for Health Reform*, Abt Associates Incorporated.
- Gawel, Joseph E. (1997). Herzberg's theory of motivation and maslow's hierarchy of needs. *Practical Assessment, Research & Evaluation*, 5(11). Available online: <http://PAREonline.net/getvn.asp?v=5&n=11>.
- George A, Scott K, Govender V, editors. *Health policy and systems research reader on human resources for health*. Geneva: World Health Organization; 2017. Licence: CC BY-NC-SA 3.0 IGO.
- Hagander, L. E., Hughes, C. D., Nash, K., Ganjawalla, K., Linden, A., Martins, Y., & Meara, J. G. (2013). Surgeon migration between developing countries and the United States: train, retain, and gain from brain drain. *World Journal of Surgery*, 37(1), 14-23.
- Hamama, M. (2018). Resignation behind the other: Do doctors disappear from government hospitals?. *Mada Masr*. Retrieved from <https://goo.gl/rnT896>
- Health at a glance (2015). Paris: Organisation for Economic Cooperation and Development. Retrieved from <http://www.oecd.org/health/health-systems/health-at-a-glance-19991312.htm>.
- HelpAge International: HelpAge's social pensions database. Retrieved from <http://www.pension-watch.net/about-social-pensions/about-social-pensions/social-pensions-database>
- Ikegami, A., Ohira, Y., Uehara, T., Noda, K., Suzuki, S., Shikino, K., & Ikusaka, M. (2017). Problem-based learning using patient-simulated videos showing daily life for a comprehensive clinical approach. *International Journal of Medical Education*, 8, 70.
- International Labour Organization (ILO). (2011). World social security report 2010–2011: providing coverage in times of crisis and beyond. Retrieved from LINK
- International Labour Organization (ILO). (2014). World social protection report 2014–15. Chapter 5 and Annex II: Measuring social security coverage. Retrieved from <http://www.ilo.ch/global/research/globalreports/world-social-security-report/2014/lang--en/index.htm>.
- Jenkins, R., Kydd, R., Mullen, P., Thomson, K., Sculley, J., Kuper, S., & Carroll, C. (2010). International migration of doctors, and its impact on availability of psychiatrists in low and middle income countries. *PloS one*, 5(2), e9049.
- Jie YX. (2014). 10 doctors calls for apologies from mass media about falsified reports. Retrieved from <http://www.yxj.org.cn/news/yijieyaowen/shehuijiaodian/2014052109582936651.htm>
- Joarder, T., Rawal, L. B., Ahmed, S. M., Uddin, A., & Evans, T. G. (2018). Retaining doctors in rural Bangladesh: a policy analysis. *International Journal of Health Policy and Management*, 7(9), 847.
- Kalk, A., Paul, F. A., & Grabosch, E. (2010). 'Paying for performance' in Rwanda: does it pay off?. *Tropical Medicine & International Health*, 15(2), 182-190.
- Kamal Elden N., Ibrahim Rizk H., & Wahby G. (2016). Improving Health System in Egypt: Perspectives of Physicians. *The Egyptian Journal of Community Medicine*, 34(1).
- Kotzee, T. J., & Couper, I. D. (2006). What interventions do South African qualified doctors think

- will retain them in rural hospitals of the Limpopo province of South Africa. *Rural Remote Health*, 6(3), 581.
- Kroezen, M., Dussault, G., Craveiro, I., Dieleman, M., Jansen, C., Buchan, J., & Sermeus, W. (2015). Recruitment and retention of health professionals across Europe: a literature review and multiple case study research. *Health Policy*, 119(12), 1517-1528.
- Kumar, R., Ahmed, J., Shaikh, B. T., Hafeez, R., & Hafeez, A. (2013). Job satisfaction among public health professionals working in public sector: a cross sectional study from Pakistan. *Human Resources for Health*, 11(1), 2.
- Kyaddondo, D., & Whyte, S. R. (2003). Working in a decentralized system: a threat to health workers' respect and survival in Uganda. *The International Journal of Health Planning and Management*, 18(4), 329-342.
- Latham, G. P., & Ernst, C. T. (2006). Keys to motivating tomorrow's workforce. *Human Resource Management Review*, 16(2), 181-198.
- Law No. 79/1972. Law for Regulations of Egyptian Universities: Egypt Government Portal; Constitution and Laws. Retrieved from <https://www.egypt.gov.eg/arabic/laws/download/newlaws/LawNo.49for 1972.pdf>
- Legler, C., Pedersen, K., Bensulock, M., Castillo, P., Thomsen, K., Kennedy III, W., & Leger, M. M. (2005). Global Applicability of Physician Assistants. *The Journal of Physician Assistant Education*, 16(2), 128-129.
- Leshabari, M. T., Muhondwa, E. P., Mwangu, M. A., & Mbembati, N. A. (2008). Motivation of health care workers in Tanzania: a case study of Muhimbili National Hospital. *East Afr J Public Health*, 5(1), 32-37.
- Lo, C. H. K. (2005). The development of physician assistant education in Taiwan. *The Journal of Physician Assistant Education*, 16(2), 107-108.
- Locke, E. A. (1991). The motivation sequence, the motivation hub, and the motivation core. *Organizational Behavior and Human Decision Processes*, 50, 288-299.
- Locke, E. A., & Dunnette, M. D. (1976). Handbook of industrial and organizational psychology. *The nature and causes of job satisfaction*, 1297-1349.
- Locke, E. A., & Latham, G. P. (1990). Work motivation and satisfaction: Light at the end of the tunnel. *Psychological Science*, 1(4), 240-246.
- Loza, N., & Sorour, E. (2016). Brain drain: the issues raised for Egypt by the emigration of psychiatrists. *BJPsych International*, 13(3), 59-61.
- Mackintosh, M., Raghuram, P., & Henry, L. (2006). A perverse subsidy: African trained nurses and doctors in the NHS. *Soundings*, 34(34), 103-113.
- Mada Masr. (2018). Supreme Administrative Court overturns a provision for an increase in infection allowance for doctors. *Mada Masr*. Retrieved from <https://goo.gl/Rr3vv7>
- Malik, A. A., Yamamoto, S. S., Soares, A., Malik, Z., & Sauerborn, R. (2010). Motivational

- determinants among physicians in Lahore, Pakistan. *BMC Health Services Research*, 10(1), 201.
- Mansour, M., Mansour, J. B., & El Swesy, A. H. (2010). Scaling up proven public health interventions through a locally owned and sustained leadership development programme in rural Upper Egypt. *Human Resources for Health*, 8(1), 1.
- Marinucci, F., Majigo, M., Wattleworth, M., Paterniti, A. D., Hossain, M. B., & Redfield, R. (2013). Factors affecting job satisfaction and retention of medical laboratory professionals in seven countries of Sub-Saharan Africa. *Human Resources for Health*, 11(1), 38.
- Marshall, C., & Rossman, G. B. (2014). *Designing qualitative research*. Sage publications.
- Masad, S. (2016). MP Shadia Thabit backs down on "law preventing doctors from traveling. *Albawabh News*. Retrieved from <https://www.albawabhnews.com/show.aspx?id=2260260>
- Maslow, A. H., Frager, R., Fadiman, J., McReynolds, C., & Cox, R. (1970). *Motivation and personality* (Vol. 2).
- Mathauer, I., & Imhoff, I. (2006). Health worker motivation in Africa: the role of non-financial incentives and human resource management tools. *Human Resources for Health*, 4(1), 24.
- Mbindyo, P., Gilson, L., Blaauw, D., & English, M. (2009). Contextual influences on health worker motivation in district hospitals in Kenya. *Implementation Science*, 4(1), 43.
- McAuliffe, E., Manafa, O., Maseko, F., Bowie, C., & White, E. (2009). Understanding job satisfaction amongst mid-level cadres in Malawi: the contribution of organisational justice. *Reproductive Health Matters*, 17(33), 80-90.
- McEuen, M. (1997). Assessing health sector policy reform strategies in Egypt: a summary of PHR analyses.
- Meessen B, Musango L, Kashala J-P, Lemlin J. (2006). Reviewing institutions of rural health centres: the Performance Initiative in Butare, Rwanda. *Trop Med Int Health* 2006; 11: 1303-17 doi: 10.1111/j.1365-3156.2006.01680.x pmid: 16903893.
- Miles, M. B., Huberman, A. M., Huberman, M. A., & Huberman, M. (1994). *Qualitative data analysis: An expanded sourcebook*. sage.
- Ministry of finance Transparency Initiative. (MFTI). (2015). Egypt citizen budget 2014/2015. Retrieved from <http://www.budget.gov.eg/Budget20142015/Budget/2ca0bea2-0bc8-453f-adb7-cb1de74ce781>
- Ministry of Health and Population (MOHP). (2009). Egyptian fellowship, family medicine specialty details. Retrieved from <http://www.egyfellow.mohealth.gov.eg/Fileupload/019%20%D8%B7%D8%A8%20%D8%A7%D9%84%D8%A3%D8%B3%D8%B1%D8%A9.pdf>
- Misau, Y. A., Al-Sadat, N., & Gerei, A. B. (2010). Brain-drain and health care delivery in developing countries. *Journal of Public Health in Africa*, 1(1).
- Mohamed, A. M. (2013). Willingness and professional motivations of medical students to work in

- rural areas: a study in Alexandria, Egypt. *Healthcare in Low-resource Settings*, 1(1), 4.
- Morgan, L. (2010). Some days are better than others: lessons learned from Uganda's first results-based financing pilot. *World Bank, Washington DC*.
- Nakhimovsky S., Glandon D., Rafeh N., & Hassan N. (2011). Egypt National Health Accounts: 2008/09. Retrieved from http://pdf.usaid.gov/pdf_docs/pnadz604.pdf
- National Authority for Quality Assurance and Accreditation in Education (NAQAAE). (2009). The National Academic Reference Standards for Medicine. Retrieved from <http://naqaae.eg/wp-content/uploads/2014/PDF/1.pdf>
- National Health and Family Planning Commission (NHFPC). (2013). China Health Statistics Yearbook. Retrieved from <http://www.nhfpc.gov.cn/htmlfiles/zwgkzt/ptjnj/year2013/index2013.html>
- Omar, M. (2017). Deficiency in doctors in 29 health units in Fayoum. *Akhbar Elyoum*. Retrieved from <https://goo.gl/PX8DSZ>.
- Oxford Business Group (OBG). (2016). Great progress for Egyptian public health. Retrieved from <https://oxfordbusinessgroup.com/overview/under-strain-while-public-health-has-seen-significant-progress-greater-investments-are-required>
- Patel, V. (2003). Recruiting doctors from poor countries: the great brain robbery?. *BMJ: British Medical Journal*, 327(7420), 926.
- Paul, F. (2009). A qualitative study on health worker motivation and the Rwandan performance based finance initiative in district hospitals. *London: London School of Economics*, 44(8),1-35.
- Population Council (PC). (2013). Evaluation of performance-based finance (PBF) pilot in Samburu County, Kenya. Qualitative Research Findings.
- Purohit, B., & Bandyopadhyay, T. (2014). Beyond job security and money: driving factors of motivation for government doctors in India. *Human Resources for Health*, 12(1), 12.
- Rao, K. D., Ryan, M., Shroff, Z., Vujicic, M., Ramani, S., & Berman, P. (2013). Rural clinician scarcity and job preferences of doctors and nurses in India: a discrete choice experiment. *PloS one*, 8(12), e82984.
- Rawal, L. B., Joarder, T., Islam, S. M. S., Uddin, A., & Ahmed, S. M. (2015). Developing effective policy strategies to retain health workers in rural Bangladesh: a policy analysis. *Human Resources for Health*, 13(1), 36.
- Razee, H., Whittaker, M., Jayasuriya, R., Yap, L., & Brentnall, L. (2012). Listening to the rural health workers in Papua New Guinea—the social factors that influence their motivation to work. *Social Science & Medicine*, 75(5), 828-835.
- Reyad, M.(2018). 7 Reasons to prove failure .. Does the hospital specialist fill the deficit of health units?. *Sout Alomma*. Retrieved from <https://goo.gl/9gn2y3>
- Robbins, S. P., & Judge, T. A. (2013). Organizational behavior. 12th ed. ed, ed. T. Judge 2007, Upper Saddle River, N.J. Pearson/Prentice Hall.
- Royal, K. D., & Rinaldo, J. C. (2016). There's education, and then there's education in medicine. *Journal of Advances in Medical Education & Professionalism*, 4(3), 150.

- Ruck, N. F., & Darwish, O. A. (1991). Motivating health workers through nutrition training: an example from Egypt. *Health Policy and Planning*, 6(2), 130-140.
- Rudasingwa, M., & Uwizeye, M. R. (2017). Physicians' and nurses' attitudes towards performance-based financial incentives in Burundi: a qualitative study in the province of Gitega. *Global Health Action*, 10(1), 1270813.
- Rutten, M. (2009). The economic impact of medical migration: A receiving country's perspective. *Review of International Economics*, 17(1), 156-171.
- Saleh, W. F. (2006). Reforming Egypt's health system: is it that simple?. *BMJ*, 333(7573), 859-860.
- Seoudi, S. (2018). Minister of Health suspends travel abroad for doctors because of deficits. *Dostor*. Retrieved from <https://www.dostor.org/2193873>
- Shams, T., & El-Masry, R. (2013). Job Stress and Burnout among Academic Career Anaesthesiologists at an Egyptian University Hospital. *Sultan Qaboos University Medical Journal*, 13(2), 287-95.
- Sheikh, K., George, A., & Gilson, L. (2014). People-centred science: strengthening the practice of health policy and systems research. *Health Research Policy and Systems*, 12(1), 19.
- Sheikh, K., Rajkumari, B., Jain, K., Rao, K., Patanwar, P., Gupta, G., & Sundararaman, T. (2012). Location and vocation: why some government doctors stay on in rural Chhattisgarh, India. *International Health*, 4(3), 192-199.
- Shen, Gordon C., Ha Thi Hong Nguyen, Ashis Das, Nkenda Sachingongu, Collins Chansa, Jumana Qamruddin, and Jed Friedman. "Incentives to Change: Effects of Performance-Based Financing on Health Workers in Zambia." *Human Resources for Health* 15, no. 1 (February 28, 2017): 20. <https://doi.org/10.1186/s12960-017-0179-2>.
- Shortell, S.M. & Kaluzny, A.D. (2006). Health care management: organization, design, and behavior. Thomson Delmar Learning's series in health services administration. Vol. 5th. 2006, Clifton Park, NY: Thomson Delmar Learning. 567.
- Sibomana, S. & Reveillon M. (2015). Performance based financing of priority health services. Burundi case study.
- Sinsky, C. A., Willard-Grace, R., Schutzbank, A. M., Sinsky, T. A., Margolius, D., & Bodenheimer, T. (2013). In search of joy in practice: a report of 23 high-functioning primary care practices. *The Annals of Family Medicine*, 11(3), 272-278.
- Soeters, R., Habineza, C., & Peerenboom, P. B. (2006). Performance-based financing and changing the district health system: experience from Rwanda. *Bulletin of the World Health Organization*, 84, 884-889.
- Ssengooba, F., McPake, B., & Palmer, N. (2012). Why performance-based contracting failed in Uganda—an "open-box" evaluation of a complex health system intervention. *Social Science & Medicine*, 75(2), 377-383.
- Tarek, N. (2016). Shadia Thabit: I finished six articles with the "travel ban on doctors", the most important of which is the payment of full tuition. *Al Youm Alsaba*. Retrieved from <https://goo.gl/U31syU>

- Tekian, A., & Boulet, J. (2015). A longitudinal study of the characteristics and performances of medical students and graduates from the Arab countries. *BMC Medical Education*, 15(1), 200.
- Tendler, J., & Freedheim, S. (1994). Trust in a rent-seeking world: health and government transformed in Northeast Brazil. *World Development*, 22(12), 1771-1791.
- Vandercammen, L., Hofmans, J., & Theuns, P. (2014). The mediating role of affect in the relationship between need satisfaction and autonomous motivation. *Journal of Occupational and Organizational Psychology*, 87(1), 62-79.
- Vergeer, P., & Chansa, C. (2008). Payment for performance (P4P) evaluation: Zambia country report for Cordaid. *KIT, Amsterdam*, 5295972.
- Vroom, V. H. (1964). *Work and motivation*. 1964. NY: John Wiley & sons, 45.
- Vujicic, M., Zurn, P., Diallo, K., Adams, O., & Dal Poz, M. R. (2004). The role of wages in the migration of health care professionals from developing countries. *Human Resources for Health*, 2(1), 3.
- Walton-Roberts, M. (2015). International migration of health professionals and the marketization and privatization of health education in India: From push-pull to global political economy. *Social Science & Medicine*, 124, 374-382.
- Willis-Shattuck, M., Bidwell, P., Thomas, S., Wyness, L., Blaauw, D., & Ditlopo, P. (2008). Motivation and retention of health workers in developing countries: a systematic review. *BMC Health Services Research*, 8(1), 247.
- World Bank. (2015). A Roadmap to Achieve Social Justice in Health Care in Egypt. Retrieved from <http://www.worldbank.org/content/dam/Worldbank/Feature%20Story/mena/Egypt/Egypt-Doc/egy-roadmap-sj-health.pdf>
- World Health Organization (WHO). (2017a). Regional Office for the Eastern Mediterranean Eastern Mediterranean Region: framework for health information systems and core indicators for monitoring health situation and health system performance 2017. Retrieved from http://applications.emro.who.int/docs/EMROPUB_2017_EN_16766.pdf?ua=1
- World Health Organization (WHO). (2006). Health Systems Profile Egypt. Retrieved from http://gis.emro.who.int/HealthSystemObservatory/PDF/Egypt/Health_system_organization.pdf
- World Health Organization (WHO). (2008). The World Health Report, Primary Health Care – Now More Than Ever. Retrieved from https://www.who.int/whr/2008/08_chap3_en.pdf?ua=1
- World Health Organization (WHO). (2013). Human Resources for Health (HRH) commitment pathways, Egypt. Retrieved from http://www.who.int/workforcealliance/forum/2013/EMRO_Egypt.pdf
- World Health Organization (WHO). (2014a). Assessing the regulation of the private health sector in the Eastern Mediterranean Region: Egypt.

- World Health Organization (WHO). (2017b). *Framing the health workforce agenda for the Sustainable Development Goals: biennium report 2016–2017: WHO health workforce* (No. WHO/HIS/HWF/biennium report/2017.1). World Health Organization.
- World Health Organization (WHO). (2018). Global Health Observatory data repository. Retrieved from <http://apps.who.int/gho/data/node.main.A1444>
- World Health Organization Regional Office for East Mediterranean (WHO/EMRO). (2015). Report on: Review of Medical Education in the Eastern Mediterranean Region: Challenges, Priorities and a Framework for Action, Regional Committee for the Eastern Mediterranean. Retrieved from http://applications.emro.who.int/docs/RC62_presentation_technical_papers_2015_3_16503_EN.pdf
- World Health Organization Regional Office for East Mediterranean (WHO/EMRO). (2011). Egypt Health System Profile 2011. Retrieved from <http://hinfo.humaninfo.ro/gsd/healthtechdocs/documents/s17293e/s17293e.pdf>
- World Health Organization. (WHO). (2014). Mental Health Atlas. Retrieved from: https://www.who.int/mental_health/evidence/atlas/mental_health_atlas_2014/en/
- Wu, D., Wang, Y., Lam, K. F., & Hesketh, T. (2014). Health system reforms, violence against doctors and job satisfaction in the medical profession: a cross-sectional survey in Zhejiang Province, Eastern China. *BMJ Open*, 4(12), e006431.
- Xuan Tran, B., Minh, H. V., & Hinh, N. D. (2013). Factors associated with job satisfaction among commune health workers: implications for human resource policies. *Global Health Action*, 6(1), 18619.
- Yao, Y., Wang, W., Wang, F., & Yao, W. (2014). General self-efficacy and the effect of hospital workplace violence on doctors' stress and job satisfaction in China. *International Journal of Occupational Medicine and Environmental Health*, 27(3), 389-399.
- Yip, W. C. M., Hsiao, W., Meng, Q., Chen, W., & Sun, X. (2010). Realignment of incentives for health-care providers in China. *The Lancet*, 375(9720), 1120-1130.
- Youssef, M (2018). Minister of Health: 60% of doctors work in Saudi Arabia. *ElWatannews*. Retrieved from: <https://www.elwatannews.com/news/details/3860151>
- Zayed, H. (2013). Minister of Health: Stimulating anesthesia doctors to eliminate the deficit in specialty in Egypt. *Ahram Gate*. Retrieved from <http://gate.ahram.org.eg/News/330763.aspx>
- Zhang, X. (2015). Understanding the Current Situation and Challenges in the Public Private Mix (PPM) of Human Resources for Health (HRH) in Selected Areas in Egypt. (Doctoral dissertation).
- Zohry, A. (2003). The place of Egypt in the regional migration system as a receiving country. *Revue Européenne Des Migrations Internationales*, 19(3), 129-149.